

April 1948

STANDARD CASTING DESIGNS



HIGHWAY — DRAINAGE — SEWER

**CAMPBELL FOUNDRY CO.
HARRISON, NEW JERSEY**

STANDARD CASTING DESIGNS

GENERAL INFORMATION

MATERIAL

Castings are made of best quality gray cast iron under direct supervision of well organized production and metallurgical departments. Test bars are made of each and every heat and can be furnished to purchasers of castings with chemical analysis if requested.

DESIGN

Numbers listed show standard designs most generally used and are proportioned to give the most satisfactory service for the purpose intended. Castings designated as heavy are made to satisfy the most rigorous traffic conditions and will carry the heaviest wheel loads permitted by state highway departments. Castings are designed not only to provide strength and water carrying capacity, but in order to secure every possible advantage of metal distribution.

WORKMANSHIP

In order to produce castings of the highest quality, installation of the latest type mechanical moulding, sand conditioning and melting equipment has been carried out. Pattern equipment of our entire line has been redesigned and arranged for mechanical moulding which produces castings of accurate fit, trueness to pattern and neatness in appearance. When specified, bearing surfaces on most castings shown can be machined.

STANDARDS

Most listings shown herein are of standard design and generally available from stock. It is our suggestion to engineers and architects, catalog numbers be specified wherever possible in order to eliminate delays and for future reference. In addition to figures shown we have available a large selection of patterns of uncommon designs along with wheel guards, furnace castings, bridge, dock and marine castings.

GUARANTEE

Any casting designated as heavy or highway type if broken in service will be replaced free of charge f.o.b. our plant upon receipt of broken casting within the period of one year.

CAMPBELL FOUNDRY COMPANY

800 BERGEN STREET

HARRISON

NEW JERSEY

TELEPHONES HARRISON 6-5480
 RECTOR 2-9714 (NEW YORK CITY)

SIDING ON D. L. & W. R. R.

SIXTH EDITION CATALOG

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RECTANGULAR FRAMES AND GRATES

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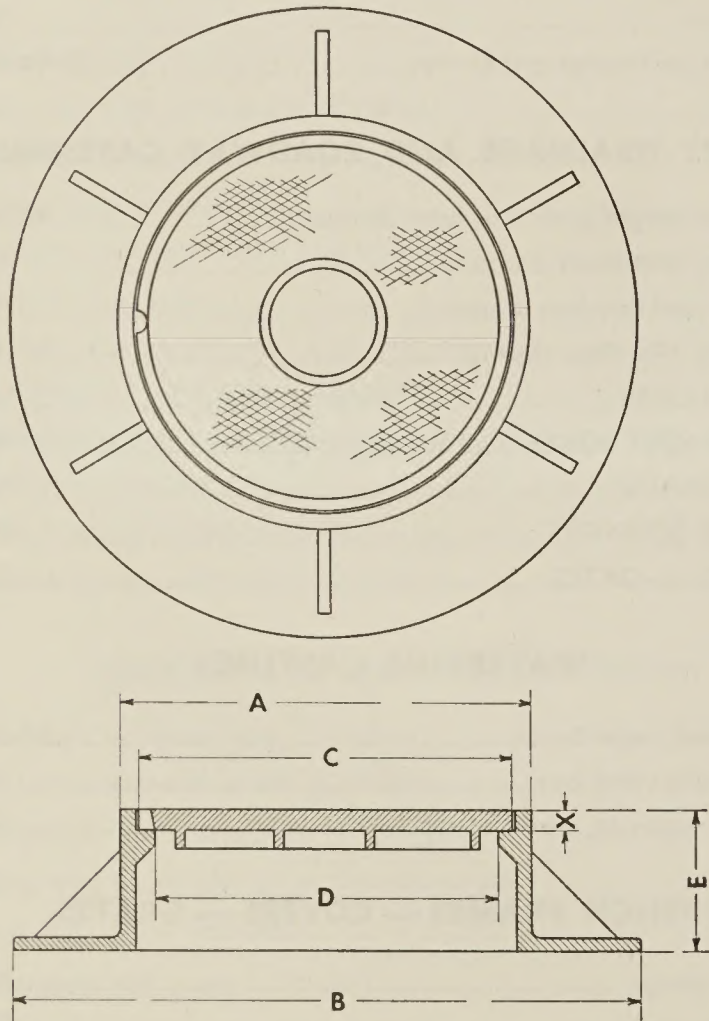
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Heavy Highway Manhole Frames and Covers

CIRCULAR STANDARD TYPE FRAME

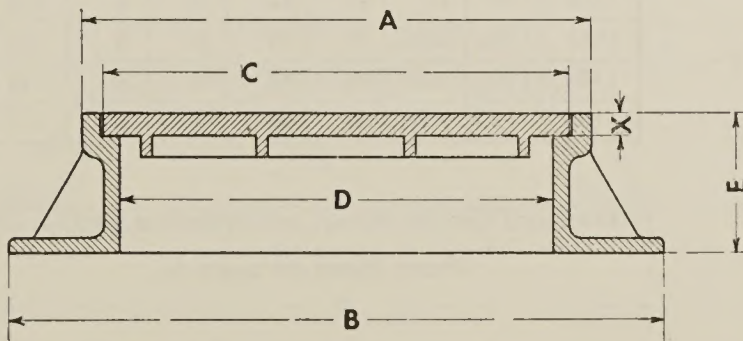
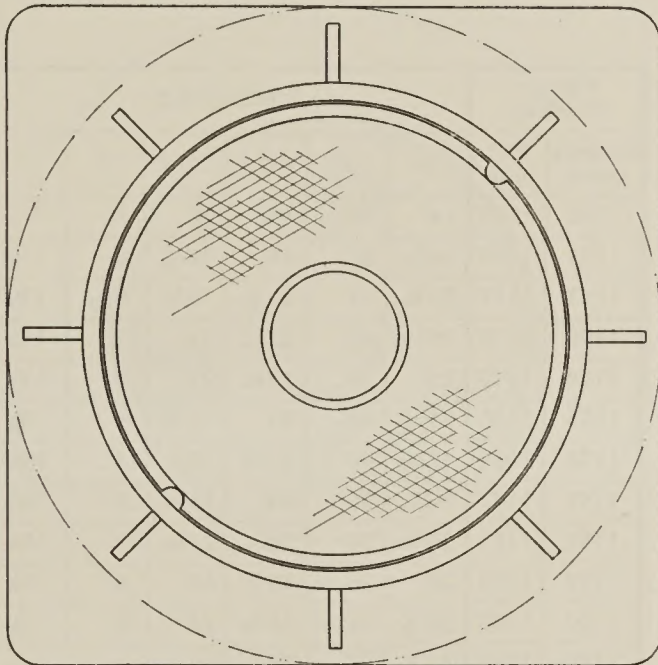


Pattern Numbers		DIMENSIONS					
Round Flange	Square Flange	A	B	C	D	E	X
1000	1050	14	18	12	11	8	1
1001	1051	20 1/4	26	18	16 1/4	8	1 1/4
1002	1052	23 3/4	37	21 1/4	19 1/2	9 5/8	1 3/8
1003	1053	25 1/2	40	22 1/2	21	10	1 3/8
1004	1054	25	36	22 3/4	21	9	1 3/4
1005	1055	25 1/4	36	23	21 1/2	9	1 3/8
1006	1056	26 1/4	40	23 3/4	22	11	1 5/8
1007	1057	26 3/4	36	24	21 3/4	8	1 3/8
1008	1058	26 3/4	36	24	21 3/4	10	1 3/8
1009	1059	28	36	25 3/4	24	8	1 3/8
1010	1060	28 3/4	38 3/4	26 3/8	24	8	1 1/4
1011	1061	32	42	30	27	8	1 1/2
1012	1062	34	43	32	30	8	1 1/2
1013	1063	38 1/2	48	36	34	8	1 1/2
1014	1064	44 3/4	54	42	40	8	1 1/2
1015	1065	50 3/4	60	48	46	8	1 1/2

For Grating Type Manholes See Page 6

Heavy Highway Manhole Frames and Covers

CIRCULAR BELL TYPE FRAME

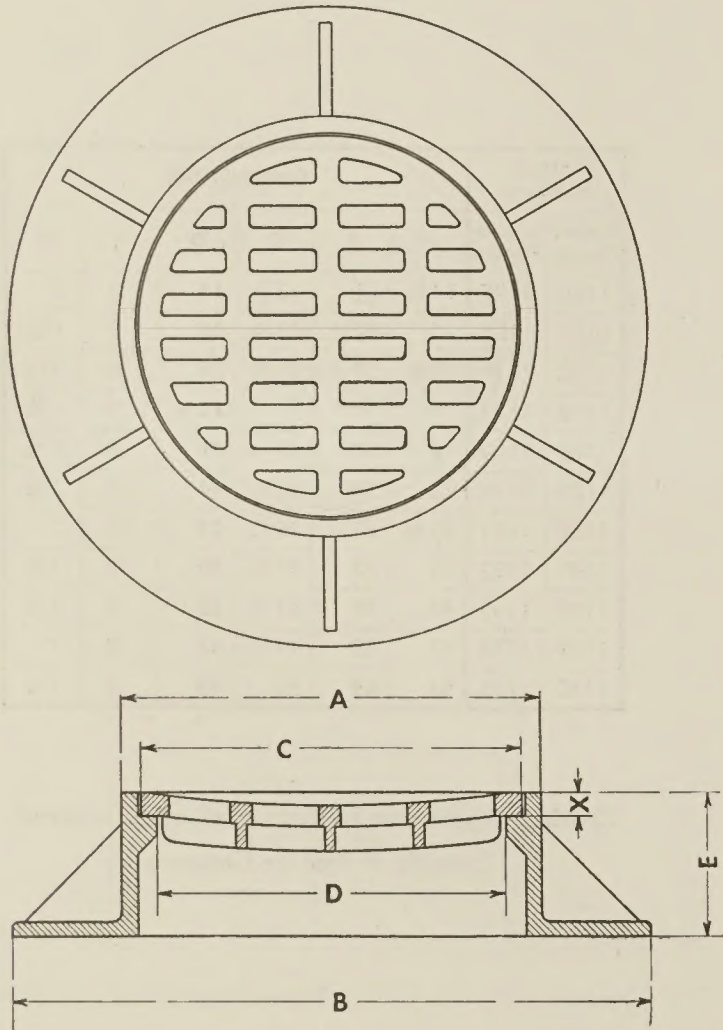


Pattern Numbers		DIMENSIONS						
Round Flange	Square Flange	A	B	C	D	E	X	
1100	1125	14 1/4	11	12	10	8	1	
1101	1126	25	32 1/2	22 1/4	20	8	1 5/8	
1102	1127	25 3/4	31	23 3/4	22	8	2 1/2	
1103	1128	26 1/4	38	24	22 1/4	9	1 3/8	
1104	1129	28	36	25 3/4	24	8	1 3/8	
1105	1130	28	36	25 3/4	24	10	1 3/8	
1106	1131	31 3/4	37	29 1/2	27	10	2	
1107	1132	34	42	31 3/4	30	8	1 3/8	
1108	1133	41	48	37 3/4	36	8	1 1/2	
1109	1134	47	55	44 1/4	42	8	2	
1110	1135	53	64	50	48	8	1 1/2	

Grating Covers can be furnished when ordered.
Specify if Flat or Concave.

Heavy Highway Frames and Grates

CIRCULAR STANDARD TYPE FRAME

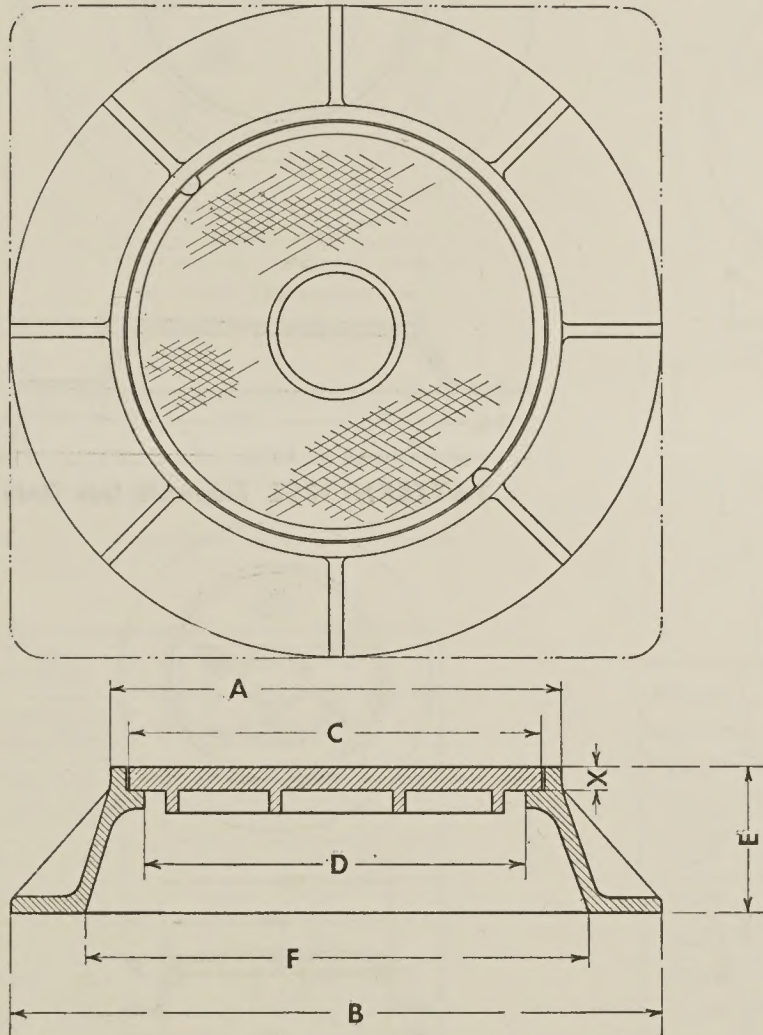


Pattern Numbers		DIMENSIONS					
Concave Grate	Flat Grate	A	B	C	D	E	X
1150	1175	14	18	12	11	8	1
1151	1176	20 1/4	26	18	16 1/4	8	1 1/4
1152	1177	23 3/4	37	21 1/4	19 1/2	9 5/8	1 3/8
1153	1178	25 1/2	40	22 1/2	21	10	1 3/8
1154	1179	25	36	22 3/4	21	9	1 3/4
1155	1180	25 1/4	36	23	21 1/2	9	1 3/8
1156	1181	26 1/4	40	23 3/4	22	11	1 5/8
1157	1182	26 3/4	36	24	21 3/4	8	1 3/8
1158	1183	26 3/4	36	24	21 3/4	10	1 3/8
1159	1184	28	36	25 3/4	24	8	1 3/8
1160	1185	28 3/4	38 3/4	26 3/8	24	8	1 1/4
1161	1186	32	42	30	27	8	1 1/2
1162	1187	34	43	32	30	8	1 1/2
1163	1188	38 1/2	48	36	34	8	1 1/2
1164	1189	44 3/4	54	42	40	8	1 1/2
1165	1190	50 3/4	60	48	46	8	1 1/2

Frames and Grates Shown are interchangeable with those listed on page 4.

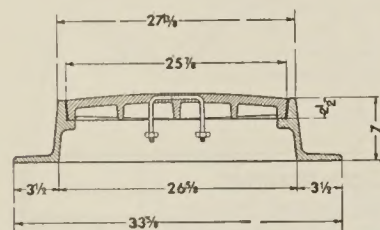
Heavy Highway Manhole Frame and Cover

CIRCULAR FLARED TYPE FRAME

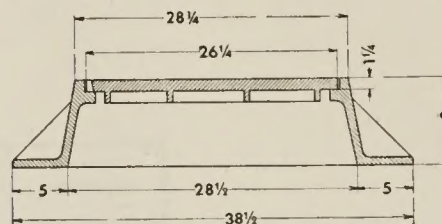
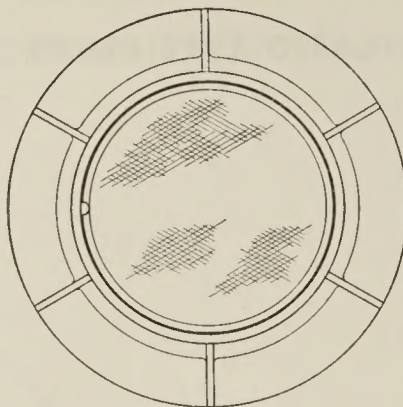


Pattern Numbers		DIMENSIONS						
Round Flange	Square Flange	A	B	C	D	E	F	X
1200	1225	24 $\frac{3}{4}$	38 $\frac{1}{2}$	22 $\frac{1}{4}$	20 $\frac{1}{2}$	8	26 $\frac{1}{2}$	1 $\frac{1}{2}$
1201	1226	25 $\frac{1}{4}$	40	22 $\frac{1}{2}$	20 $\frac{3}{4}$	10	30	1 $\frac{1}{2}$
1202	1227	27 $\frac{1}{2}$	41	25 $\frac{3}{8}$	23	8	31	2
1203	1228	28	40	25 $\frac{3}{4}$	24	8	32	1 $\frac{3}{8}$
1204	1229	28	43 $\frac{1}{2}$	25 $\frac{3}{4}$	24	10	34 $\frac{1}{2}$	1 $\frac{3}{8}$
1205	1230	31	46 $\frac{1}{2}$	28 $\frac{3}{4}$	27	10	37 $\frac{1}{2}$	1 $\frac{3}{8}$
1206	1231	34	49	31 $\frac{3}{4}$	30	10	40	1 $\frac{3}{8}$

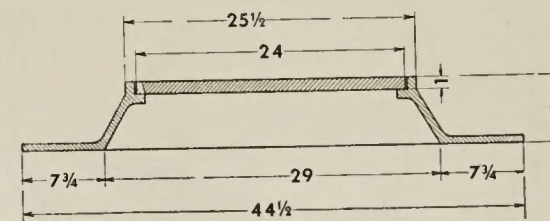
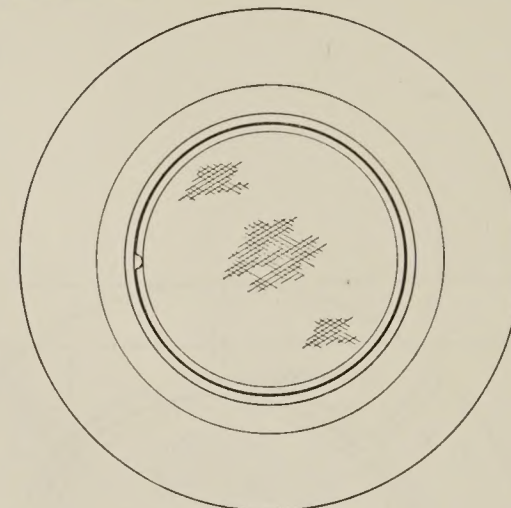
Standard Manhole Frames and Covers



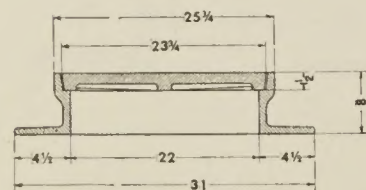
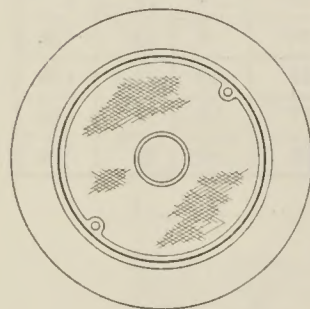
PATTERN 1250



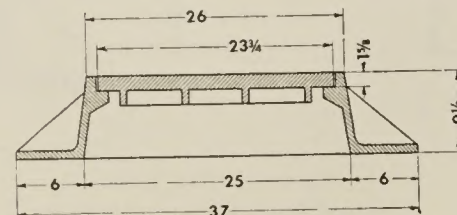
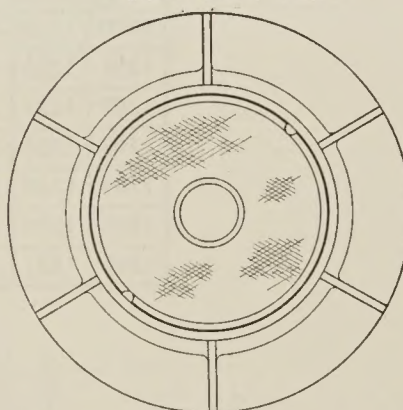
PATTERN 1251



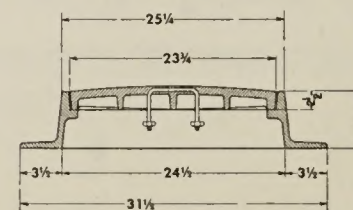
PATTERN 1252 Sidewalk Use Only



PATTERN 1253



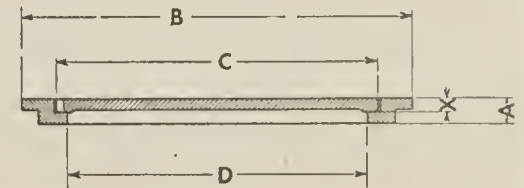
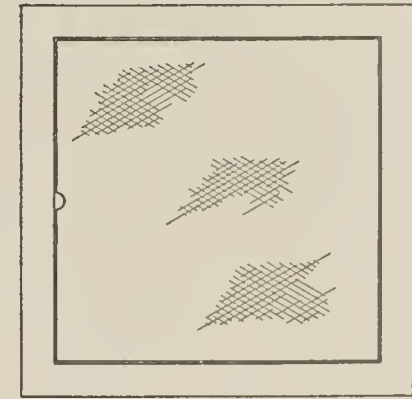
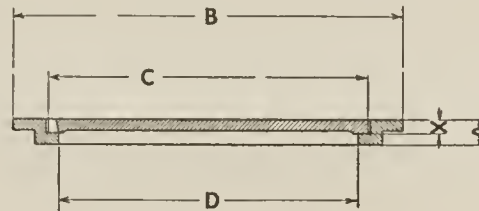
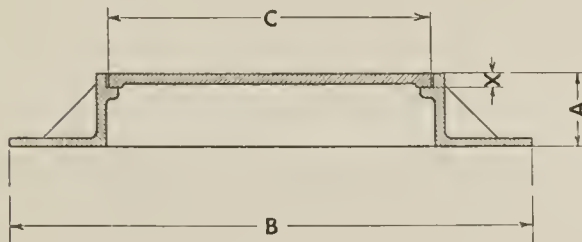
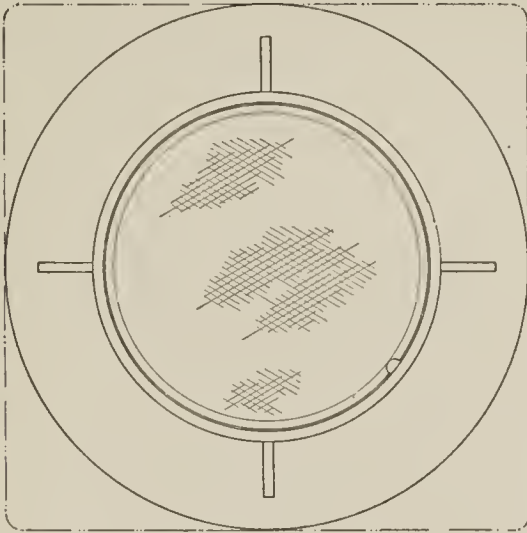
PATTERN 1254



PATTERN 1255

Sidewalk Frames and Covers

LIGHT TRAFFIC



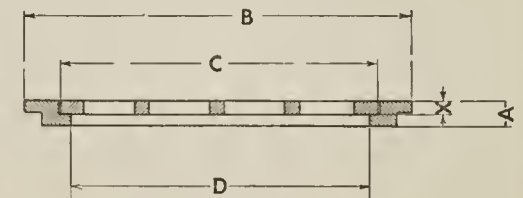
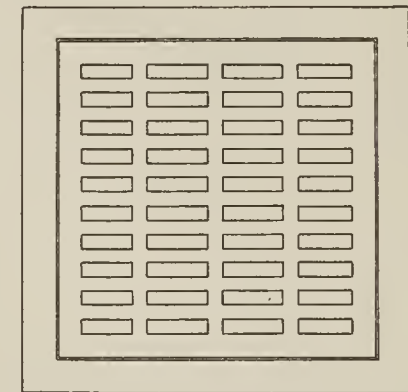
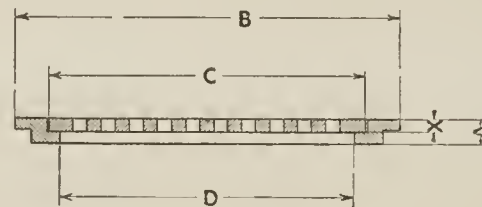
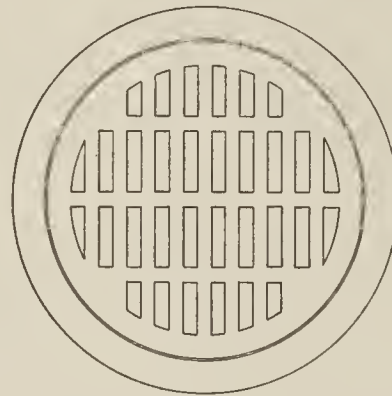
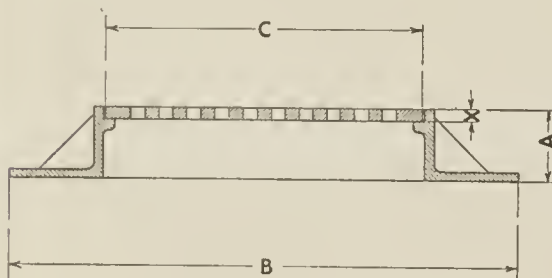
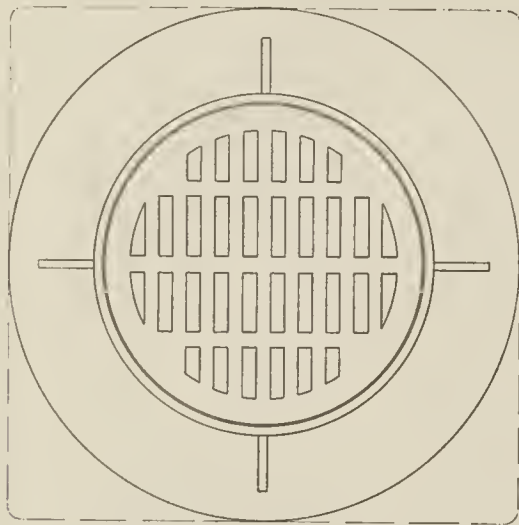
Pattern Numbers		DIMENSIONS			
Round Flange	Square Flange	A	B	C	X
1300	1313	4	17	12	$\frac{3}{4}$
1301	1314	4	26 $\frac{1}{4}$	18	1
1302	1315	4	36	24	1
1303	1316	6	36	24	1
1304	1317	6	42	30	1
1305	1318	8	48	36	1 $\frac{1}{4}$
1306	1319	8	54	42	1 $\frac{1}{4}$
1307	1320	8	60	48	1 $\frac{1}{4}$

Pattern Numbers	DIMENSIONS				
	A	B	C	D	X
1325	1 $\frac{7}{8}$	10	7	6	$\frac{3}{4}$
1326	1 $\frac{7}{8}$	16	13	12	$\frac{3}{4}$
1327	2	22 $\frac{1}{2}$	19	18	1
1328	2	28	25	24	1 $\frac{1}{8}$
1329	2	34 $\frac{1}{2}$	31	30	1
1330	2	40	37 $\frac{1}{2}$	36	1
1331	2	47	43 $\frac{3}{4}$	42	1 $\frac{1}{4}$
1332	2	53	49 $\frac{3}{4}$	48	1 $\frac{1}{4}$

Pattern Numbers	DIMENSIONS				
	A	B	C	D	X
1338	1 $\frac{1}{2}$	10	7	6	$\frac{3}{4}$
1339	1 $\frac{1}{2}$	18	13	12	$\frac{3}{4}$
1340	1 $\frac{3}{4}$	24	19 $\frac{1}{4}$	18	1
1341	1 $\frac{3}{4}$	30	25 $\frac{1}{4}$	24	1
1342	2	36	31 $\frac{7}{8}$	30	1
1343	2	43	37 $\frac{3}{4}$	36	1 $\frac{1}{4}$
1344	2 $\frac{1}{2}$	48	43 $\frac{3}{4}$	42	1 $\frac{1}{2}$
1345	2 $\frac{1}{2}$	54	49 $\frac{3}{4}$	48	1 $\frac{1}{2}$

Sidewalk Frames and Flat Grates

LIGHT TRAFFIC



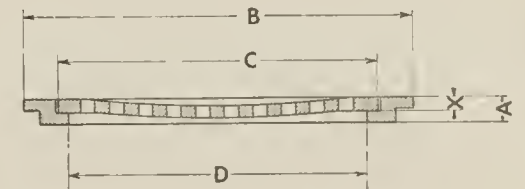
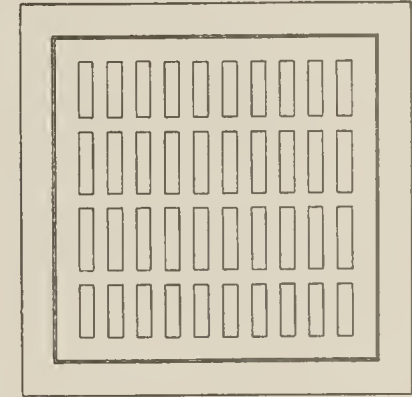
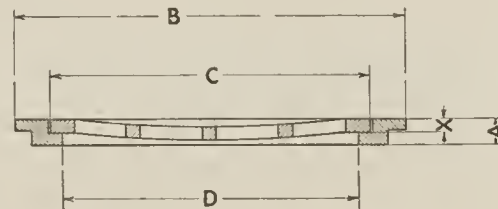
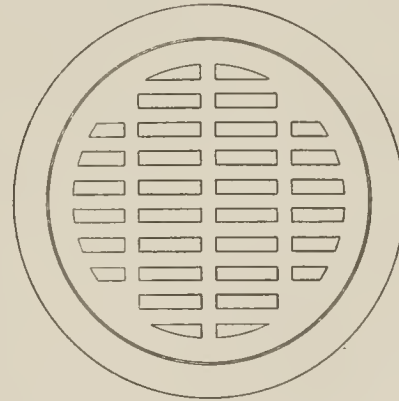
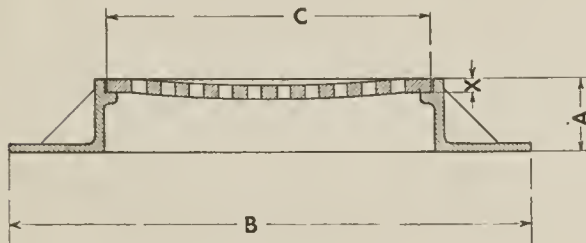
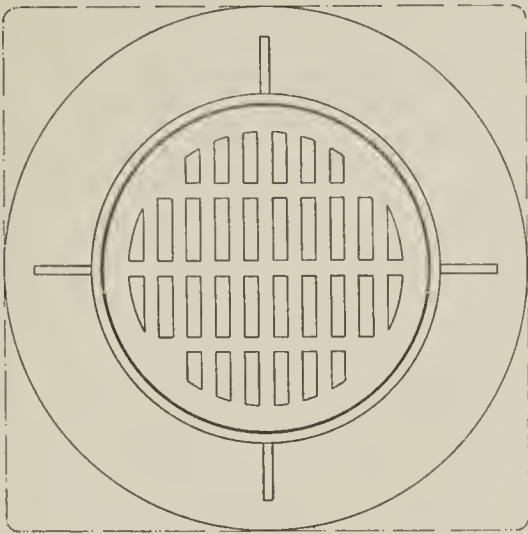
Pattern Numbers		DIMENSIONS			
Round Flange	Square Flange	A	B	C	X
1350	1363	4	17	12	¾
1351	1364	4	26¼	18	1
1352	1365	4	36	24	1
1353	1366	6	36	24	1
1354	1367	6	42	30	1
1355	1368	8	48	36	1¼
1356	1369	8	54	42	1¼
1357	1370	8	60	48	1¼

Pattern Numbers	DIMENSIONS				
	A	B	C	D	X
1375	1⅞	10	7	6	¾
1376	1⅞	16	13	12	¾
1377	2	22½	19	18	1
1378	2	28	25	24	1⅛
1379	2	34½	31	30	1
1380	2	40	37½	36	1
1381	2	47	43¾	42	1¼
1382	2	53	49¾	48	1¼

Pattern Numbers	DIMENSIONS				
	A	B	C	D	X
1388	1½	10	7	6	¾
1389	1½	18	13	12	¾
1390	1¾	24	19¼	18	1
1391	1¾	30	25¼	24	1
1392	2	36	31⅞	30	1
1393	2	43	37¾	36	1¼
1394	2½	48	43¾	42	1½
1395	2½	54	49¾	48	1½

Sidewalk Frames and Concave Grates

LIGHT TRAFFIC



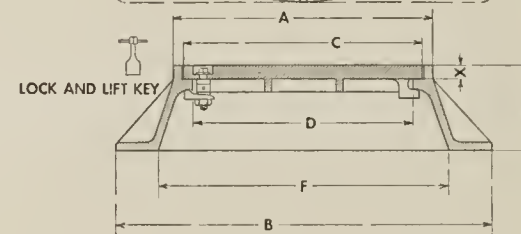
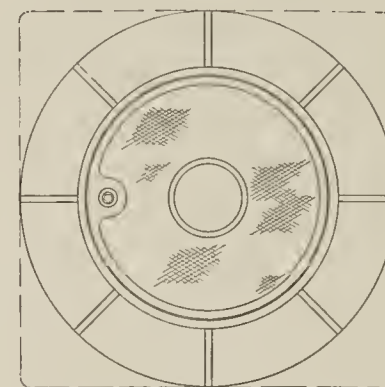
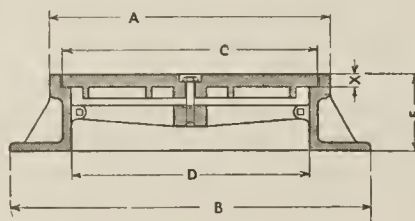
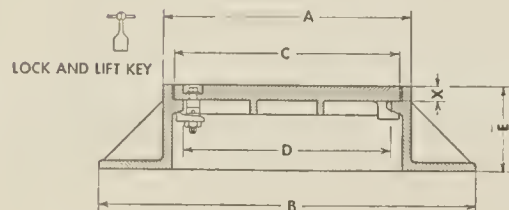
Pattern Numbers		DIMENSIONS			
Round Flange	Square Flange	A	B	C	X
1400	1413	4	17	12	¾
1401	1414	4	26 ¼	18	1
1402	1415	4	36	24	1
1403	1416	6	36	24	1
1404	1417	6	42	30	1
1405	1418	8	48	36	1 ¼
1406	1419	8	54	42	1 ¼
1407	1420	8	60	48	1 ¼

Pattern Numbers	DIMENSIONS				
	A	B	C	D	X
1425	1 ⅞	10	7	6	¾
1426	1 ⅞	16	13	12	¾
1427	2	22 ½	19	18	1
1428	2	28	25	24	1 ⅞
1429	2	34 ½	31	30	1
1430	2	40	37 ½	36	1
1431	2	47	43 ¾	42	1 ¼
1432	2	53	49 ¾	48	1 ¼

Pattern Numbers	DIMENSIONS				
	A	B	C	D	X
1438	1 ½	10	7	6	¾
1439	1 ½	18	13	12	¾
1440	1 ¾	24	19 ¼	18	1
1441	1 ¾	30	25 ¼	24	1
1442	2	36	31 ⅞	30	1
1443	2	43	37 ¾	36	1 ¼
1444	2 ½	48	43 ¾	42	1 ½
1445	2 ½	54	49 ¾	48	1 ½

Flat Grates See Page 10

Heavy Locking Type Manhole Frames and Covers

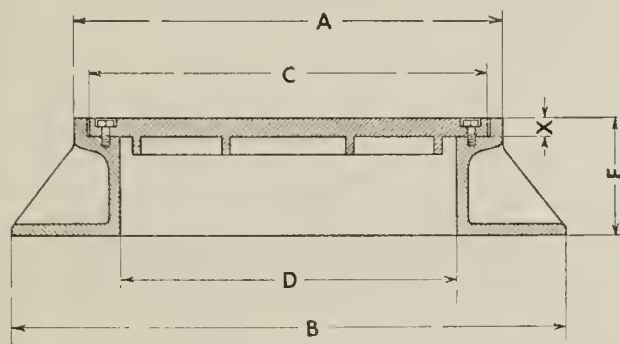
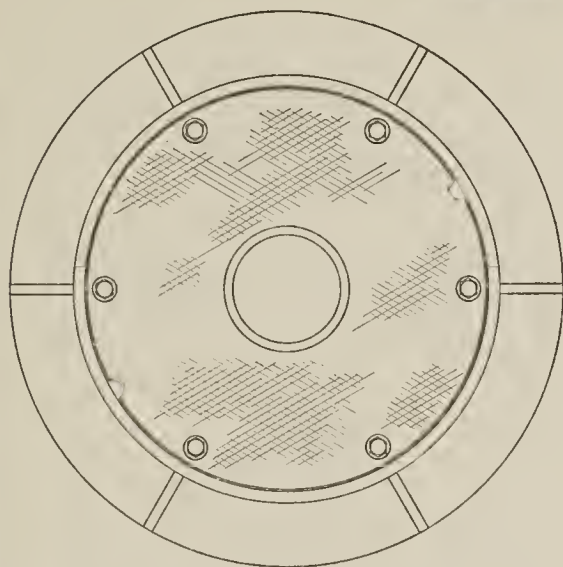


Pattern Numbers	DIMENSIONS					
	A	B	C	D	E	X
1450	20 1/4	26	18	16 1/4	8	1 1/4
1451	25	36	22 3/4	21	9	1 3/4
1452	26 3/4	36	24	21 3/4	8	1 3/8
1453	28	36	25 3/4	24	8	1 3/8
1454	32	42	30	27	8	1 1/2
1455	38 1/2	48	36	34	8	1 1/2
1456	44 3/4	54	42	40	8	1 1/2
1457	50 3/4	60	48	46	8	1 1/2

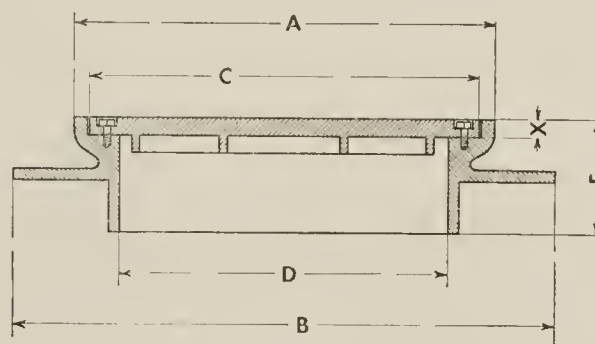
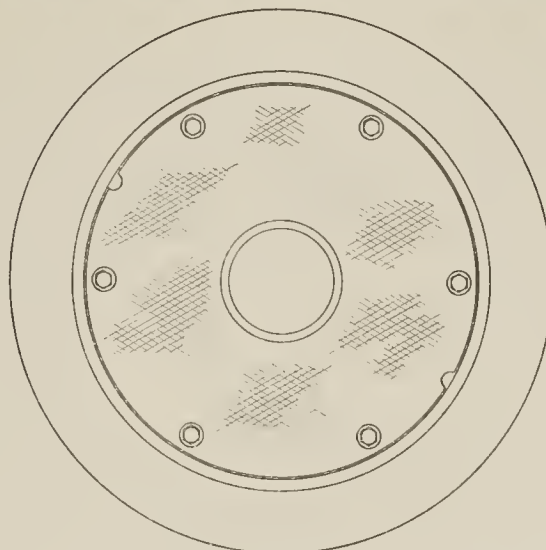
Pattern Numbers	DIMENSIONS					
	A	B	C	D	E	X
1465	25	32 1/4	22 1/4	20	8	1 5/8
1466	25 3/4	31	23 3/4	22	8	2 1/2
1467	28	36	25 3/4	24	8	1 3/8
1468	31 3/4	37	29 1/2	27	10	2
1469	34	42	31 3/4	30	8	1 3/8
1470	41	48	37 3/4	36	8	1 1/2
1471	48	55	44 1/4	42	8	2
1472	53	64	50	48	8	1 1/2

Pattern Numbers	DIMENSIONS						
	A	B	C	D	E	F	X
1485	24 3/4	38 1/2	22 1/4	20 1/2	8	26 1/2	1 1/2
1486	27 1/2	41	25 3/8	23	8	31	2
1487	28	40	25 3/4	24	8	32	1 3/8
1488	28	43 1/2	25 3/4	24	10	34 1/2	1 3/8
1489	31	46 1/2	28 3/4	27	10	37 1/2	1 3/8
1490	34	49	31 3/4	30	10	40	1 3/8

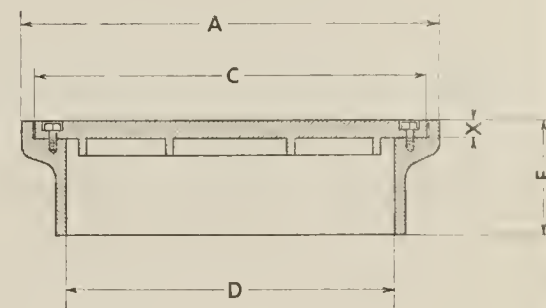
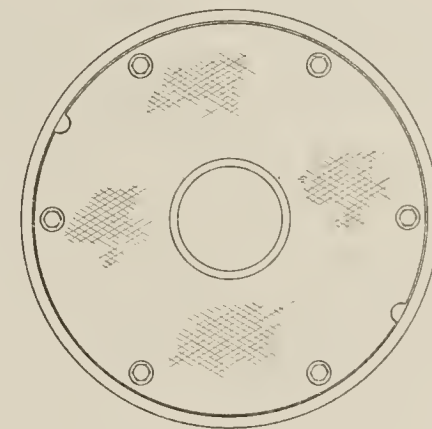
Heavy Manhole Frames and Bolted Covers



TYPE A



TYPE B

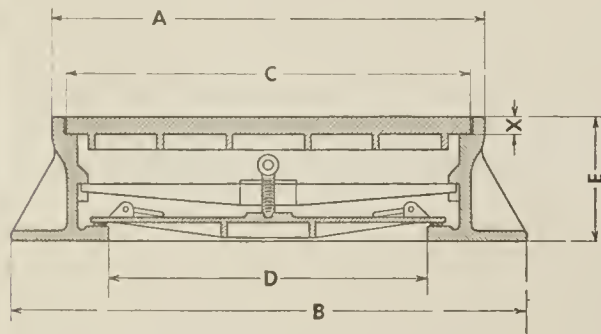
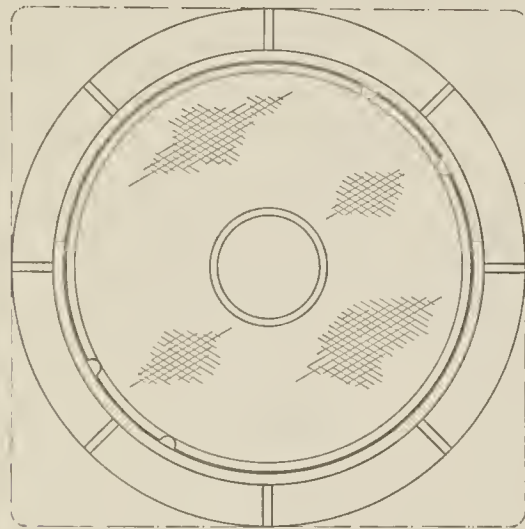


TYPE C

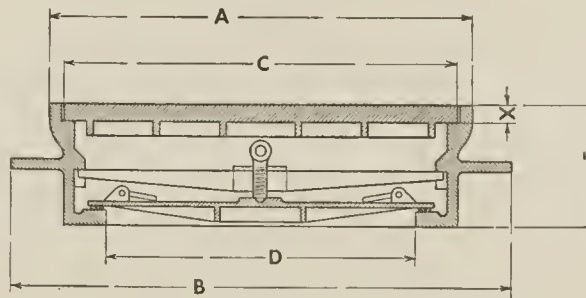
Manhole frames and covers shown on this page are supplied with machined bearing surfaces. Bolts are $\frac{1}{2}$ " diameter bronze. If specified, $\frac{1}{4}$ " flat rubber gasket can be furnished.

PATTERN NUMBERS			DIMENSIONS						
Type A	Type B	Type C	A	B	C	D	E	X	
1500	1513	1525	18	26	15 $\frac{7}{8}$	12	8	1	
1501	1514	1526	24	32	21 $\frac{7}{8}$	18	8	1 $\frac{1}{4}$	
1502	1515	1527	30	38	27 $\frac{3}{4}$	24	8	1 $\frac{1}{4}$	
1503	1516	1528	36	44	33 $\frac{3}{4}$	30	8	1 $\frac{1}{2}$	
1504	1517	1529	42	50	39 $\frac{3}{4}$	36	8	1 $\frac{1}{2}$	
1505	1518	1530	48	56	45 $\frac{3}{4}$	42	8	1 $\frac{1}{2}$	
1506	1519	1531	54 $\frac{1}{2}$	64	51 $\frac{3}{4}$	48	8	1 $\frac{5}{8}$	

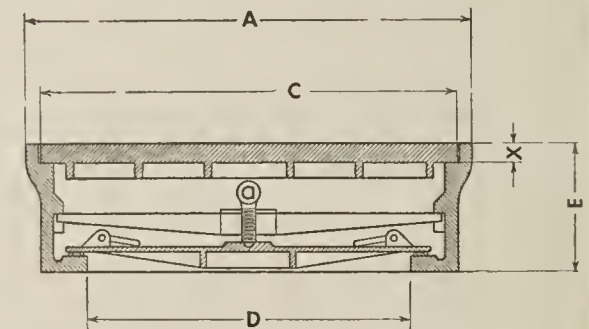
Heavy Circular Watertight Frames and Covers



TYPE A



TYPE B

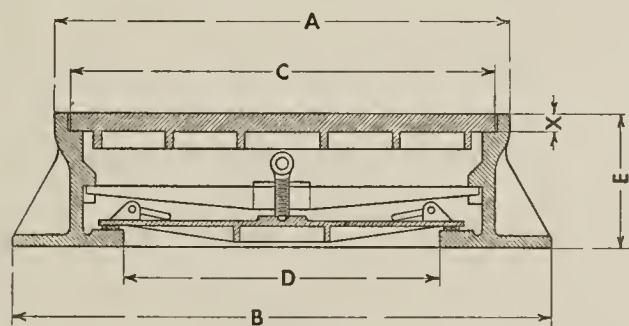
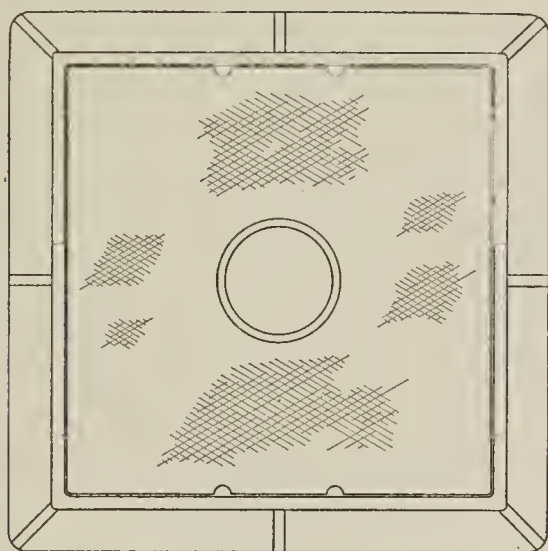


TYPE C

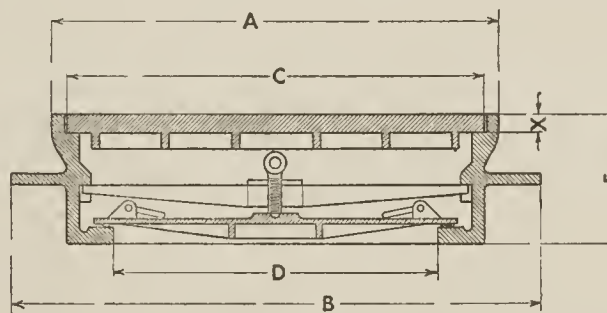
PATTERN NUMBERS				DIMENSIONS					
TYPE A		Type B	Type C						
Round Flange	Square Flange			A	B	C	D	E	X
1538	1550	1563	1575	28	38	25 ¾	21	8	1 ⅜
1539	1551	1564	1576	34 ¼	40	32	24	8	1 ⅜
1540	1552	1565	1577	34 ¼	40	32	27	8	1 ⅜
1541	1553	1566	1578	41	48	37 ¾	30	8	1 ½
1542	1554	1567	1579	47	52	44 ⅛	36	8	1 ½
1543	1555	1568	1580	53	58	50 ⅛	42	8	1 ½
1544	1556	1569	1581	59	64	56 ⅛	48	8	1 ½

Castings shown are equipped with bronze locking screw, forged steel lock bar, lack clamp and gasket.

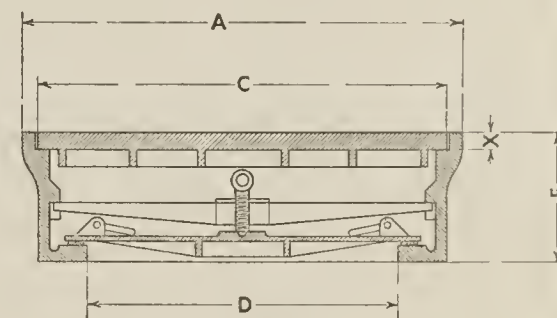
Heavy Square Watertight Frames and Covers



TYPE A



TYPE B

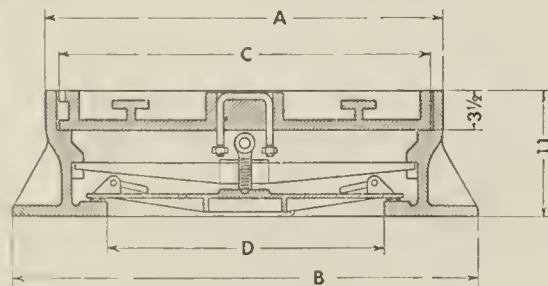
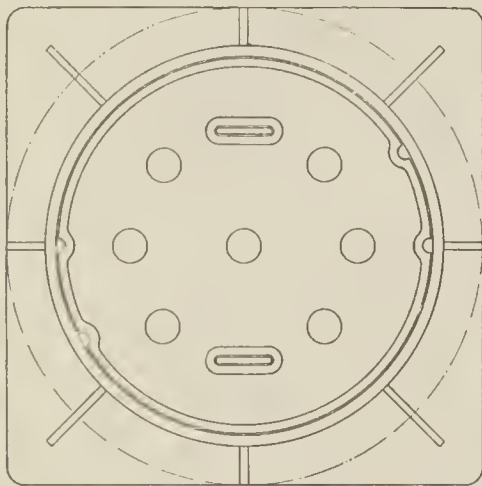


TYPE C

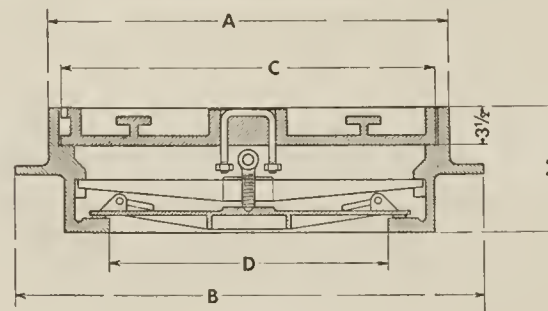
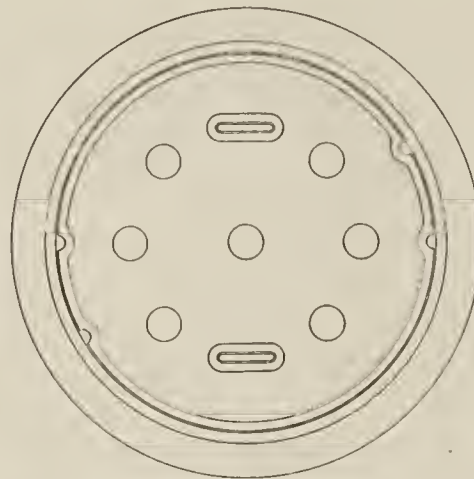
PATTERN NUMBERS			DIMENSIONS						
Type A	Type B	Type C	A	B	C	D	E	X	
1588	1600	1613	28 ³ / ₄	40	25 ³ / ₄	21	8	1 ¹ / ₄	
1589	1601	1614	31	42	29	24	10	1 ¹ / ₂	
1590	1602	1615	37 ³ / ₄	43	34 ³ / ₄	27	10	1 ¹ / ₂	
1591	1603	1616	37 ³ / ₄	43	34 ³ / ₄	30	10	1 ¹ / ₂	
1592	1604	1617	43 ¹ / ₂	52 ¹ / ₂	41	33	10	1 ¹ / ₂	
1593	1605	1618	43 ¹ / ₂	52 ¹ / ₂	41	36	10	1 ¹ / ₂	
1594	1606	1619	53	57 ¹ / ₂	49 ⁵ / ₈	42	10	1 ¹ / ₂	
1595	1607	1620	59	63 ³ / ₄	55 ³ / ₄	48	10	1 ³ / ₄	

Castings shown are equipped with Bronze Locking Screw, Forged Steel Lock Bar, Lock Clamp and Gasket.

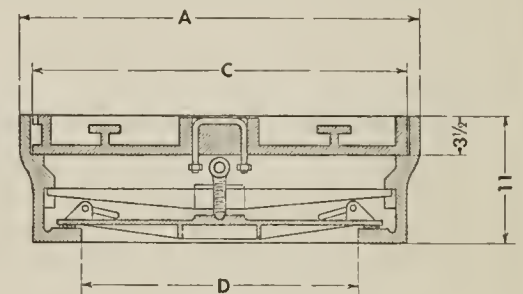
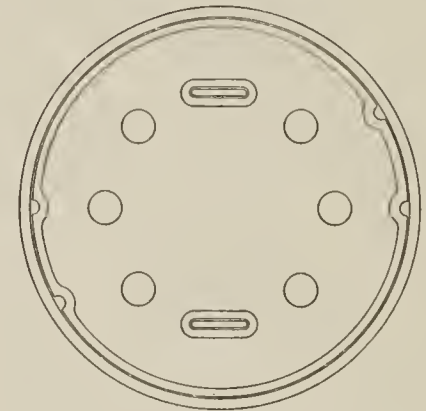
Watertight Frames with Concrete Filled Covers



TYPE A



TYPE B



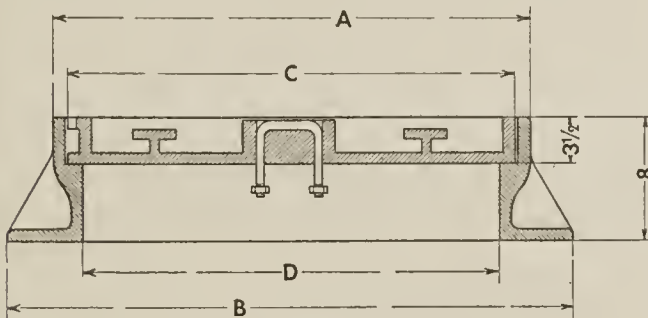
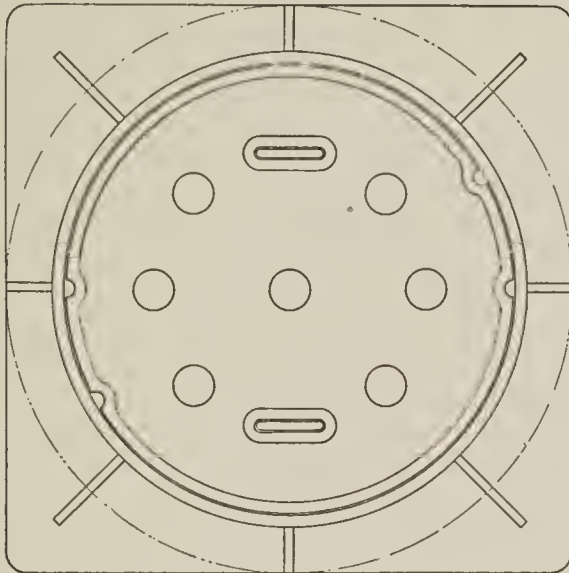
TYPE C

Concrete Fill in Covers
supplied by purchaser.

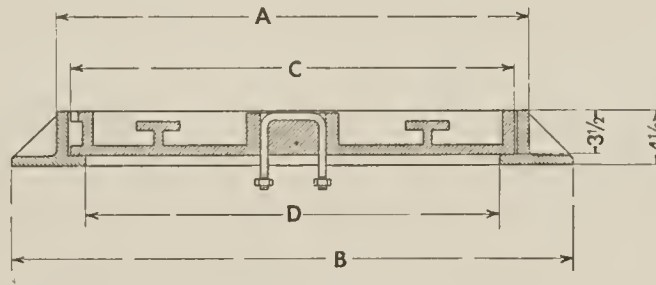
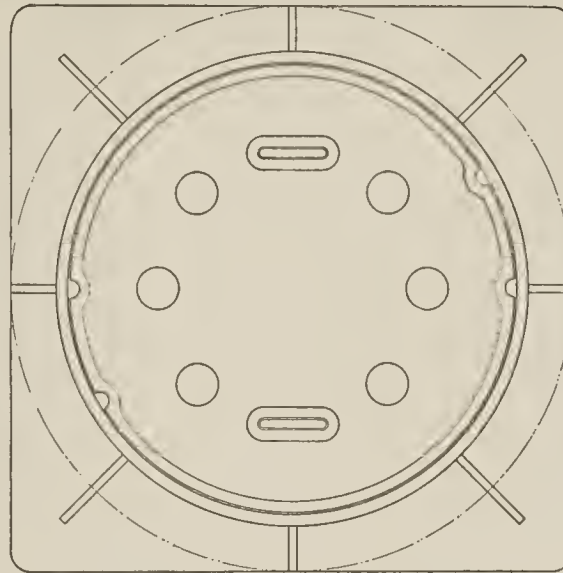
PATTERN NUMBERS				DIMENSIONS			
TYPE A		Type B	Type C	A	B	C	D
Round Flange	Square Flange						
1625	1635	1645	1655	35 1/4	40	33 1/2	24
1626	1636	1646	1656	38 1/4	43	36 1/2	27
1627	1637	1647	1657	41	46	37 3/4	30
1628	1638	1648	1658	47	52	44 1/8	36
1629	1639	1649	1659	53	58	50 1/8	42
1630	1640	1650	1660	59	64	56 1/8	48

Castings shown are equipped with
Bronze Locking Screw, Forged
Steel Lock Bar, Lock Clamp and
Gasket.

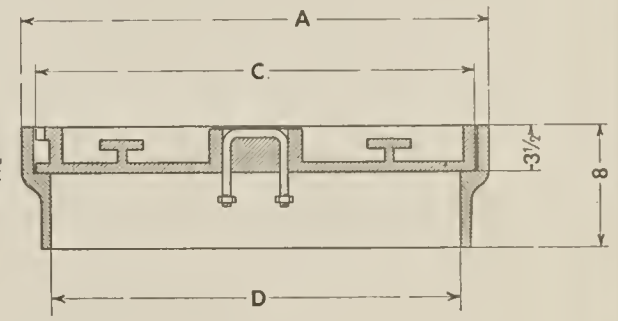
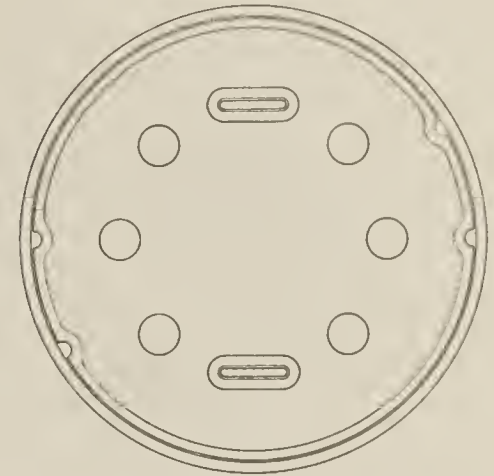
Sidewalk Type Frames with Concrete Filled Covers



TYPE A



TYPE B



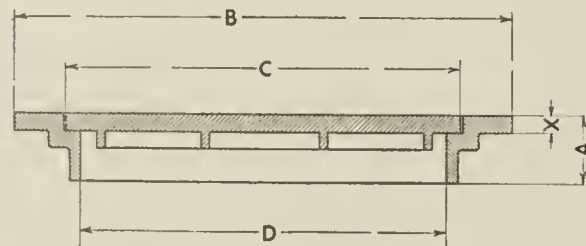
TYPE C

Concrete Fill in Covers
supplied by purchaser.

PATTERN NUMBERS					DIMENSIONS			
TYPE A		TYPE B		Type C	A	B	C	D
Round Flange	Square Flange	Round Flange	Square Flange					
1665	1675	1685	1695	1705	17 1/4	28	15 1/2	12
1666	1676	1686	1696	1706	23 1/4	34	21 1/2	18
1667	1677	1687	1697	1707	29 1/4	40	27 1/2	24
1668	1678	1688	1698	1708	35 1/4	46	33 1/2	30
1669	1679	1689	1699	1709	41 1/4	52	39 1/2	36
1670	1680	1690	1700	1710	47 1/4	58	45 1/2	42
1671	1681	1691	1701	1711	53 1/4	64	51 1/2	48

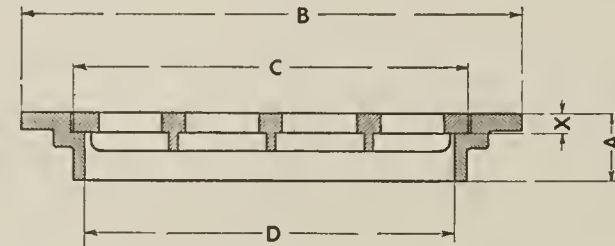
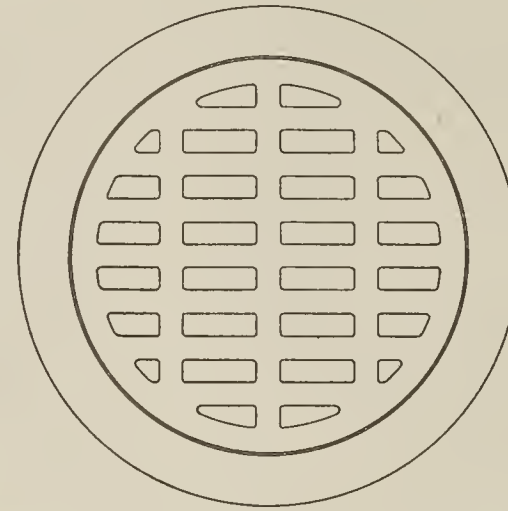
Slab Type Frames---Covers---Grates

HEAVY DESIGN — CIRCULAR



SOLID COVER

PATTERN NUMBERS			DIMENSIONS			
A=4½"	A=6"	A=8"	B	C	D	X
1715	1725	1735	19	14	12	1
1716	1726	1736	22½	19½	18	1
1717	1727	1737	29½	23	21	1⅜
1718	1728	1738	32	25¾	24	1⅜
1719	1729	1739	39	31¾	30	1¾
1720	1730	1740	44½	38½	36	1⅝
1721	1731	1741	50	44	42	1½
1722	1732	1742	56	50	48	1½

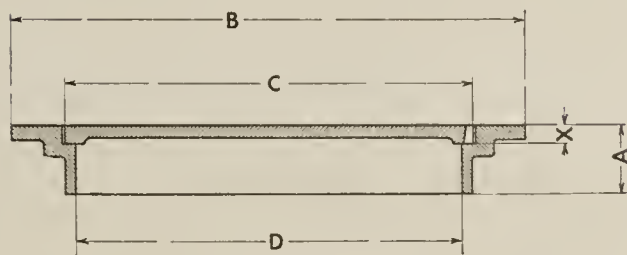
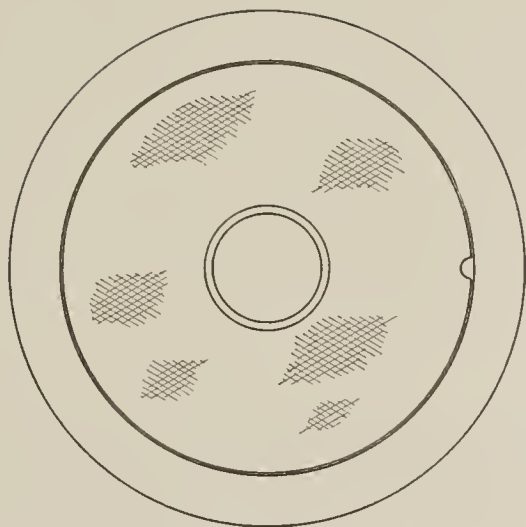


GRATING COVER

PATTERN NUMBERS			DIMENSIONS			
A=4½"	A=6"	A=8"	B	C	D	X
1745	1755	1765	19	14	12	1
1746	1756	1766	22½	19½	18	1
1747	1757	1767	29½	23	21	1⅜
1748	1758	1768	32	25¾	24	1⅜
1749	1759	1769	39	31¾	30	1¾
1750	1760	1770	44½	38½	36	1⅝
1751	1761	1771	50	44	42	1½
1752	1762	1772	56	50	48	1½

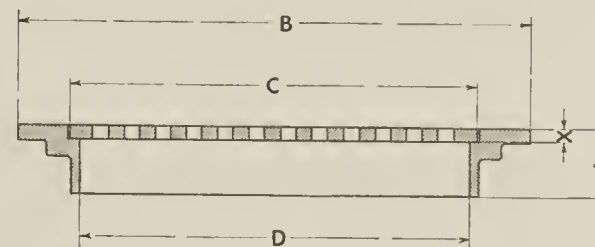
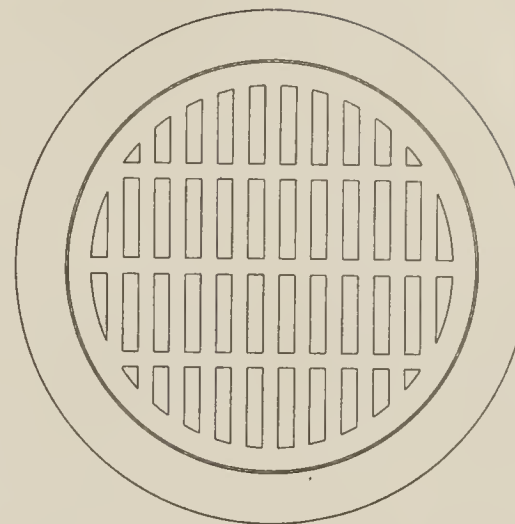
Slab Type Frames---Covers---Grates

LIGHT DESIGN — CIRCULAR



SOLID COVER

PATTERN NUMBERS			DIMENSIONS			
A=4½"	A=6"	A=8"	B	C	D	X
1775	1785	1795	19	14	12	1
1776	1786	1796	22½	19½	18	1
1777	1787	1797	28½	25½	22	1¼
1778	1788	1798	32	25¾	24	1⅜
1779	1789	1799	39	31¾	30	1¾
1780	1790	1800	44½	38½	36	1⅝
1781	1791	1801	50	44	42	1½
1782	1792	1802	56	50	48	1½

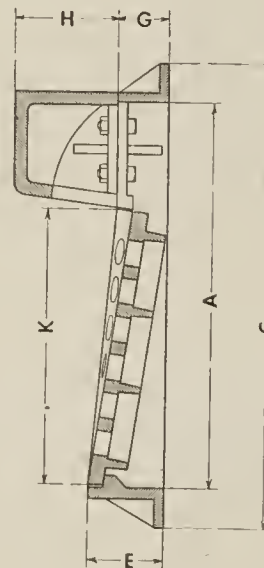
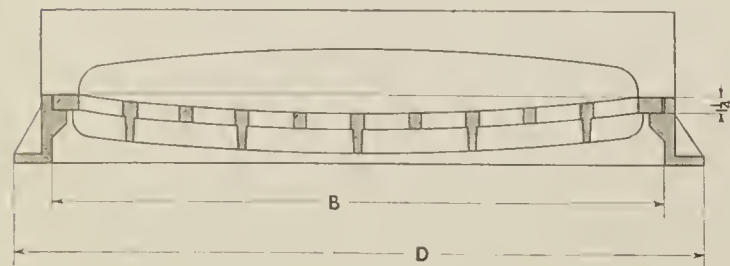
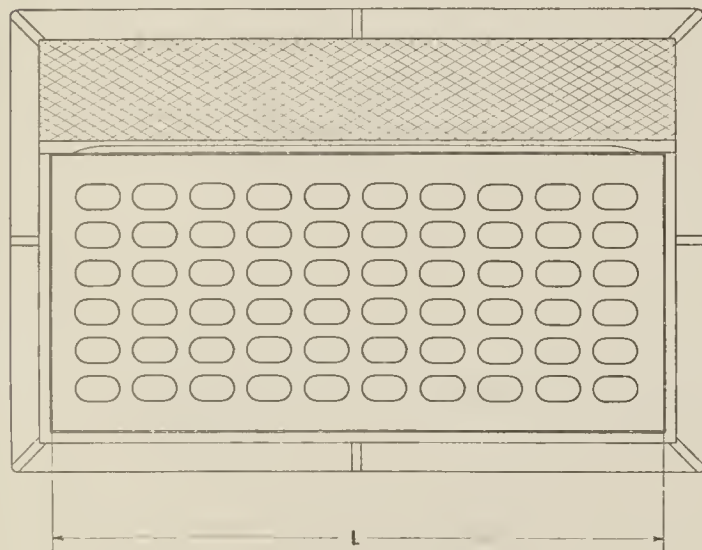


GRATING COVER

PATTERN NUMBERS			DIMENSIONS			
A=4½"	A=6"	A=8"	B	C	D	X
1810	1820	1830	19	14	12	1
1811	1821	1831	22½	19½	18	1
1812	1822	1832	28½	25½	22	1¼
1813	1823	1833	32	25¾	24	1⅜
1814	1824	1834	39	31¾	30	1¾
1815	1825	1835	44½	38½	36	1⅝
1816	1826	1836	50	44	42	1½
1817	1827	1837	56	50	48	1½

Highway Catch Basin Heads

CURB TYPE



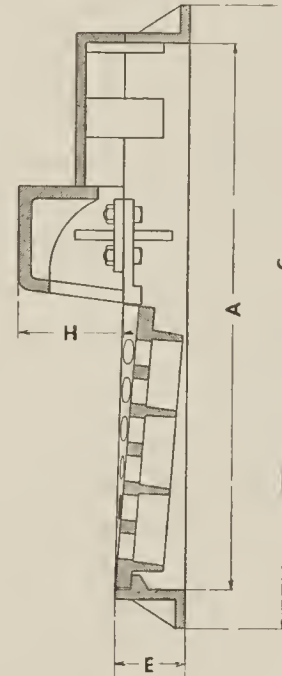
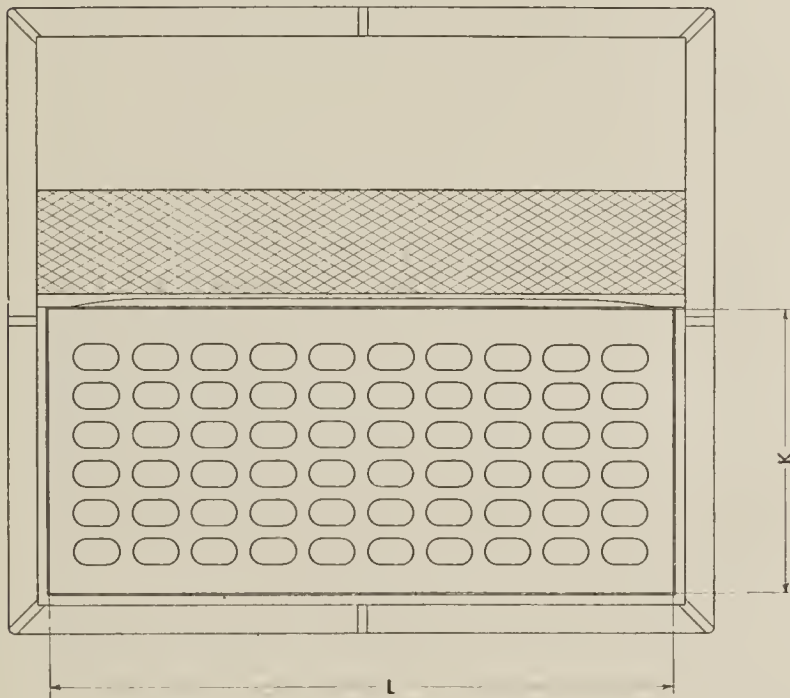
Unless otherwise specified curb head will be 8" deep with 1" batter. When ordering castings other than standard, the following information is required.

- 1—Curb height.
- 2—Batter.
- 3—Radius in feet or straight.

PATTERN NUMBERS		DIMENSIONS								
Concave Grate	Flat Grate	A	B	C	D	E	G	H	K	L
2500	2510	30	36	36	42	5½	4	8	21¾	35¾
2501	2511	30	48	36	54	5½	4	8	21¾	47¾

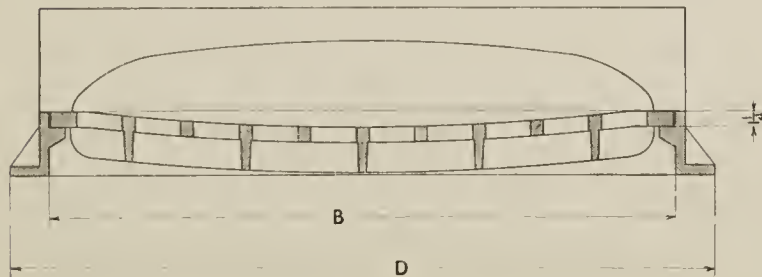
Highway Catch Basin Heads

CURB TYPE



Unless otherwise specified curb head will be 8" deep with 1" batter. When ordering castings other than standard, the following information is required.

- 1—Curb height.
- 2—Batter.
- 3—Radius in feet or straight.



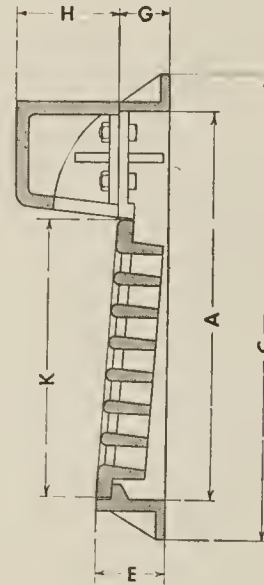
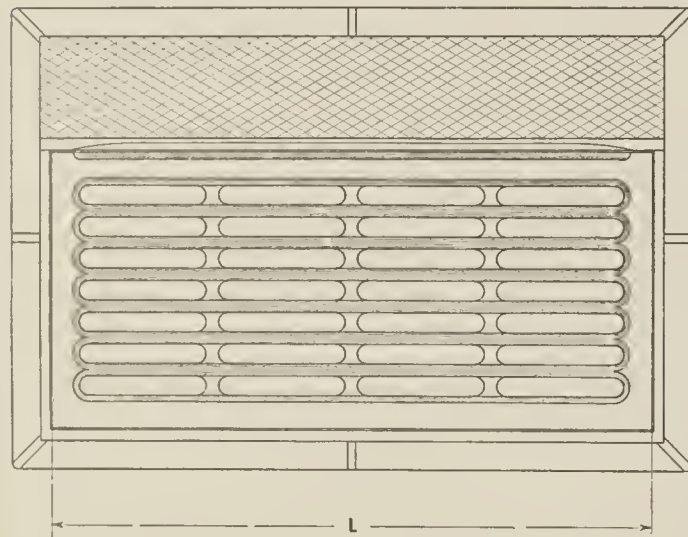
PATTERN NUMBERS		DIMENSIONS							
Concave Grate	Flat Grate	A	B	C	D	E	H	K	L
2520	2530	27½	25½	36	34	5	8	18½	25¼
2521	2531	30	30	36	36	5½	8	21¾	29¾
2522	2532	36	36	42	42	5½	8	21¾	35¾
2523	2533	42	48	48	54	5½	8	21¾	47¾

Highway Catch Basin Heads

"STREAM FLOW GRATING"

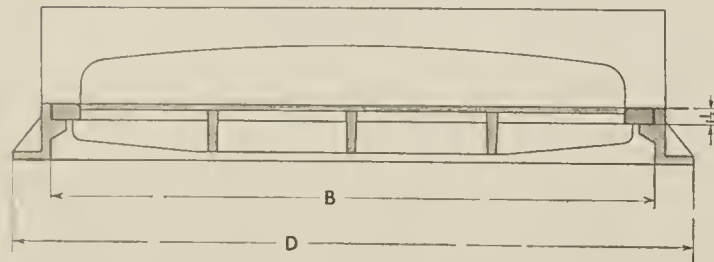
Registered Trade Mark

CURB TYPE



Unless otherwise specified curb head will be 8" deep with 1" batter. When ordering castings other than standard, the following information is required.

- 1—Curb height.
- 2—Batter.
- 3—Radius in feet or straight.



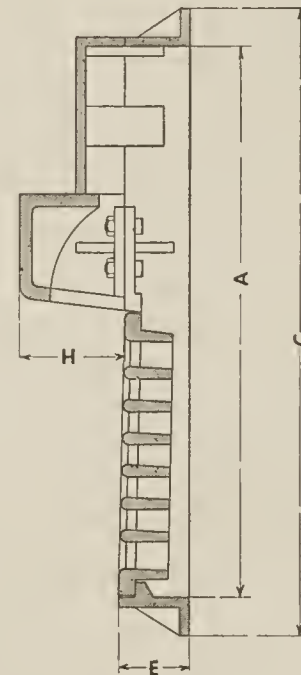
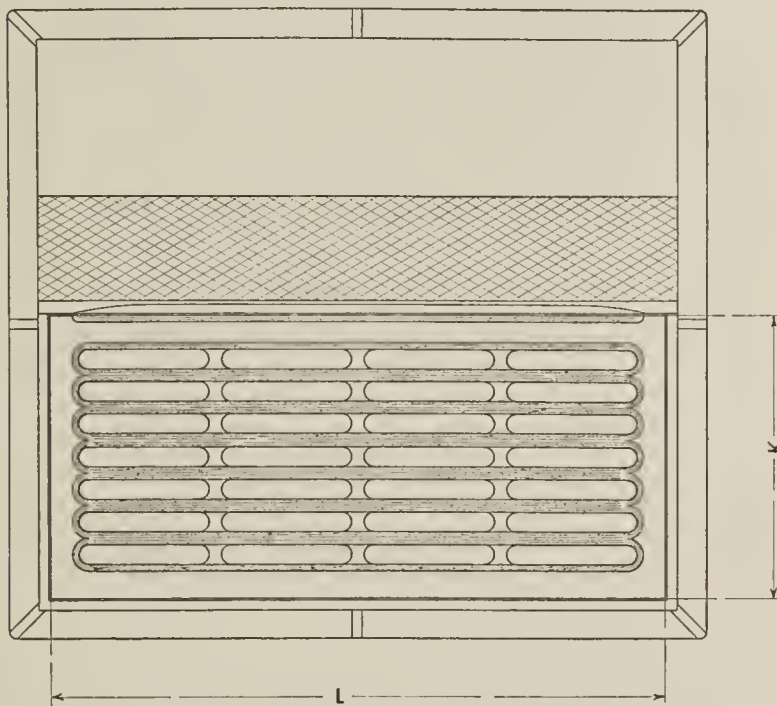
Pattern Numbers	DIMENSIONS								
	A	B	C	D	E	G	H	K	L
2540	30	36	36	42	5½	4	8	21¾	35¾
2541	30	48	36	54	5½	4	8	21¾	47¾

Highway Catch Basin Heads

"STREAM FLOW GRATING"

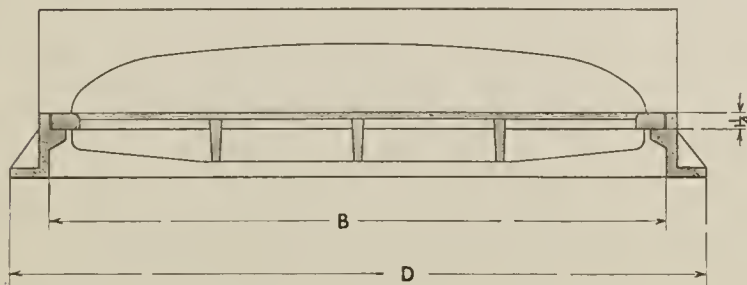
Registered Trade Mark

CURB TYPE



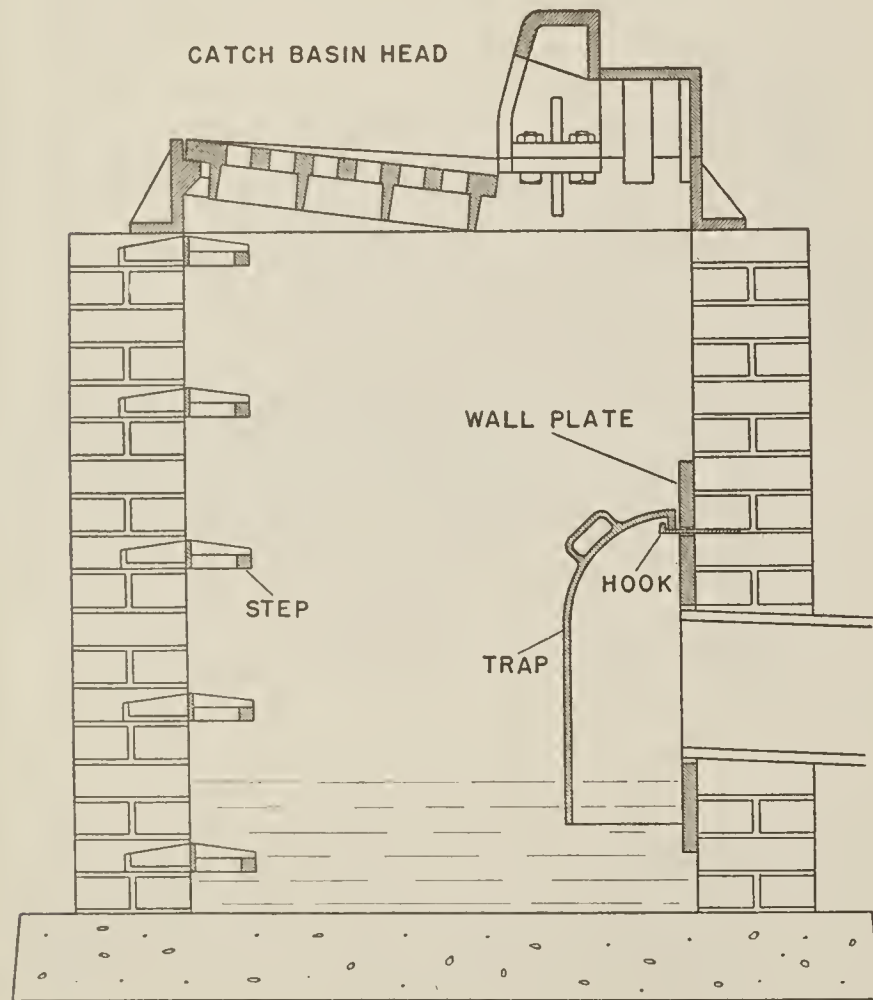
Unless otherwise specified curb head will be 8" deep with 1" batter. When ordering castings other than standard, the following information is required.

- 1—Curb height.
- 2—Batter.
- 3—Radius in feet or straight.

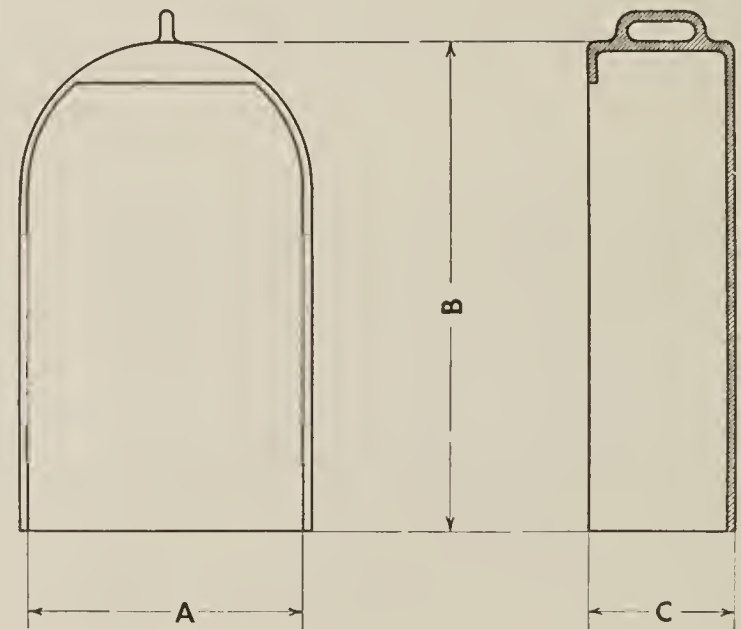


Pattern Numbers	DIMENSIONS							
	A	B	C	D	E	H	K	L
2545	27½	25½	36	34	5	8	18½	25¼
2546	30	30	36	36	5½	8	21¾	29¾
2547	36	36	42	42	5½	8	21¾	35¾
2548	42	48	48	54	5½	8	21¾	47¾

Catch Basin Traps and Hoods



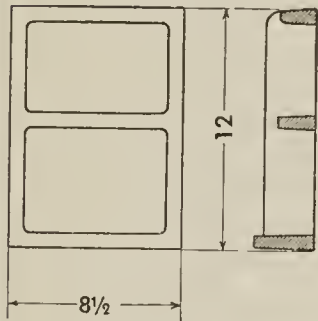
TYPICAL BASIN ASSEMBLY



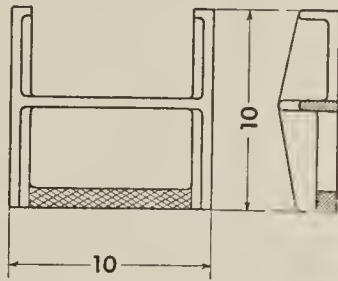
Pattern Numbers	A	B	C
2560	9½	16	4¾
2561	11½	20½	5½
2562	13¼	23½	6½
2563	15¾	26	7½
2564	18	27	9
2565	20	27	11
2566	25¼	30	11¼

Catch Basin---Manhole Fittings

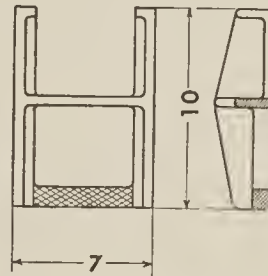
MANHOLE STEPS



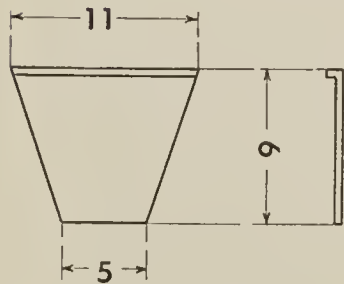
PATTERN 2580



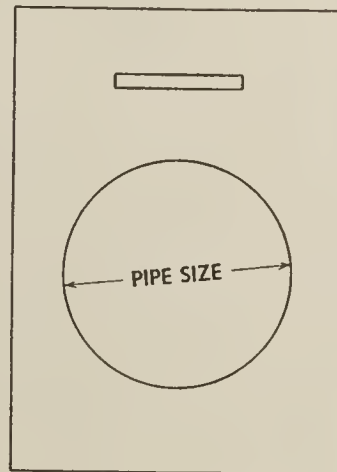
PATTERN 2581



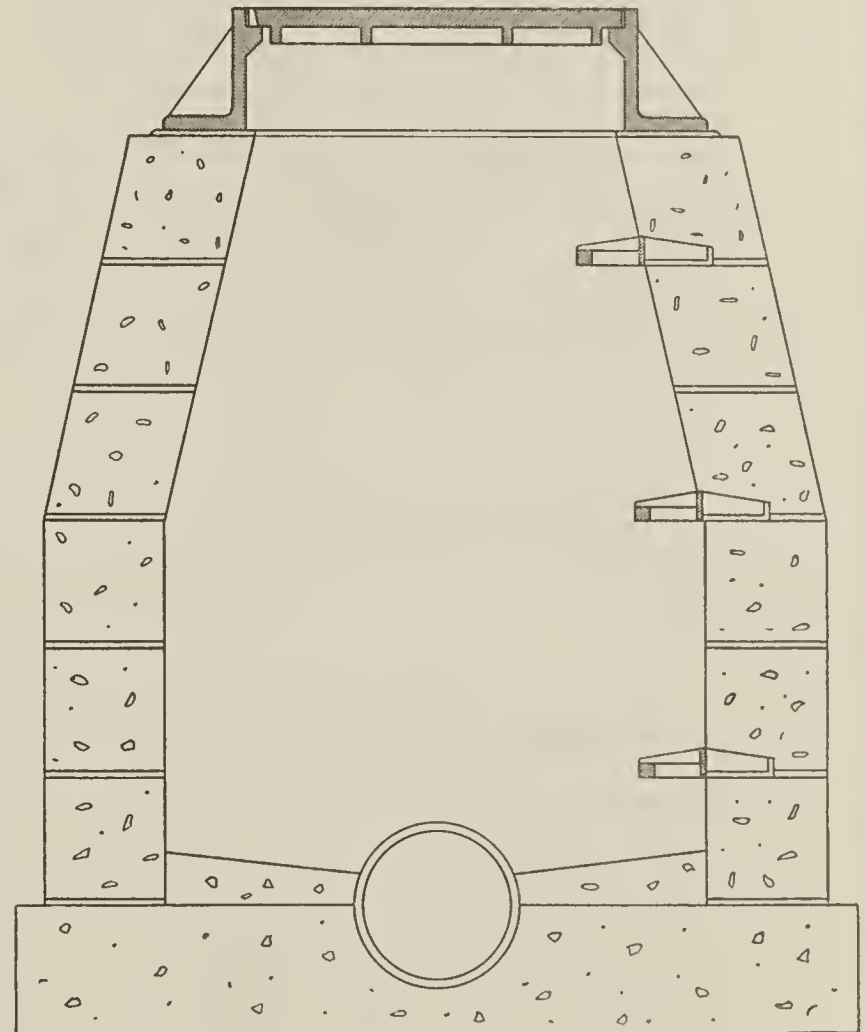
PATTERN 2582



TRAP HOOK
PATTERN 2590



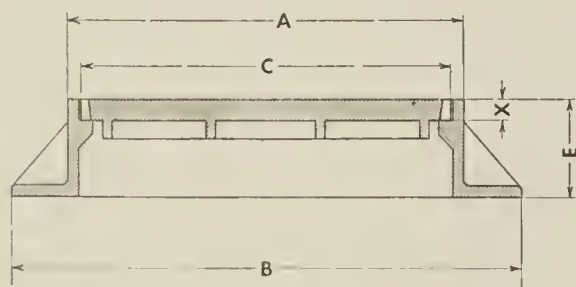
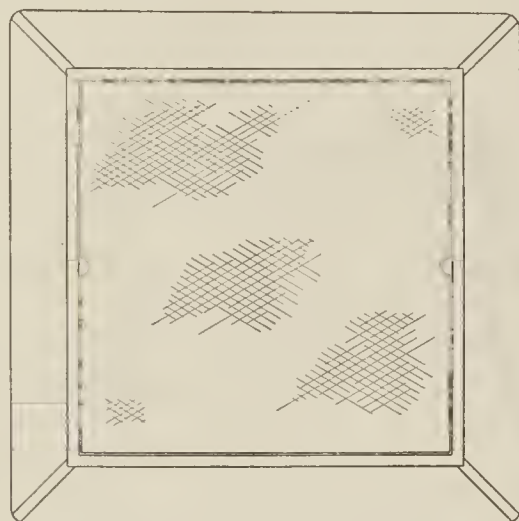
WALL PLATE



TYPICAL MANHOLE ASSEMBLY

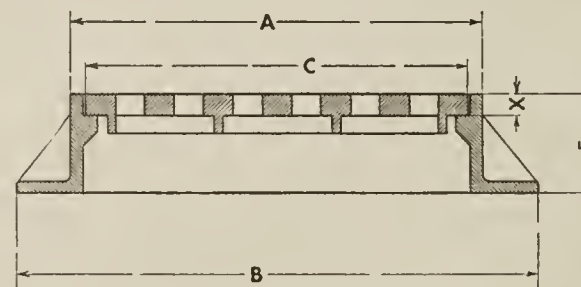
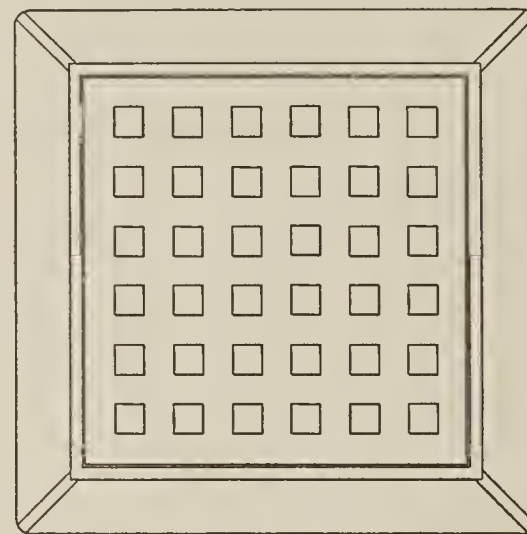
Square Frames and Covers---Grates

HEAVY DESIGN



STANDARD TYPE FRAME

Pattern Numbers	A	B	C	E	X
3000	13½	18	12	4	1
3001	19½	27	18	4	1¼
3002	26¼	36	24	6	1¾
3003	26¼	36	24	8	1¾
3004	32¼	42	30	8	1¾
3005	38¼	48	36	8	1¾
3006	44¼	54	42	8	1¾
3007	50¾	60	48	8	1¾

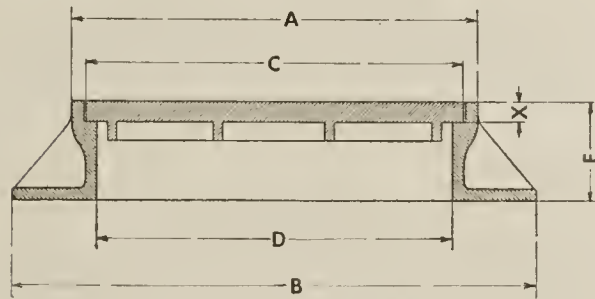
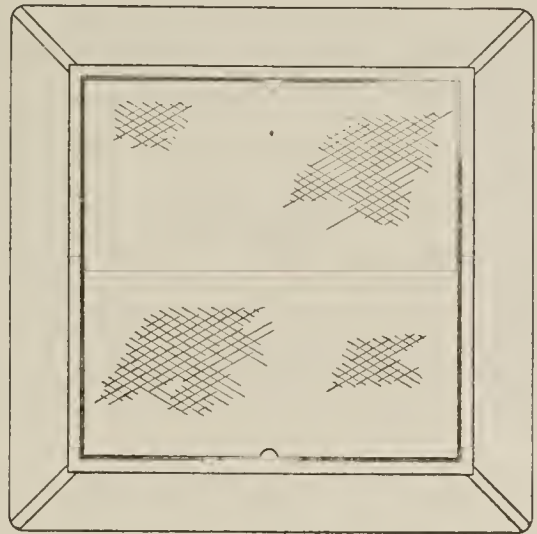


STANDARD TYPE FRAME

Pattern Numbers	A	B	C	E	X
3013	13½	18	12	4	1
3014	19½	27	18	4	1¼
3015	26¼	36	24	6	1¾
3016	26¼	36	24	8	1¾
3017	32¼	42	30	8	1¾
3018	38¼	48	36	8	1¾
3019	44¼	54	42	8	1¾
3020	50¾	60	48	8	1¾

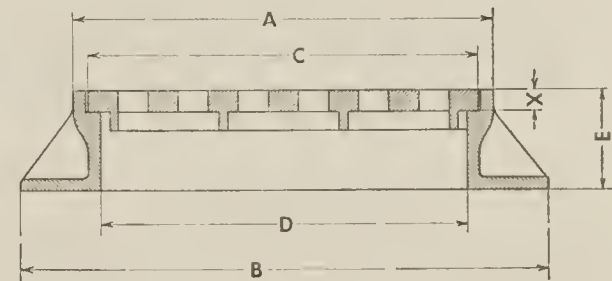
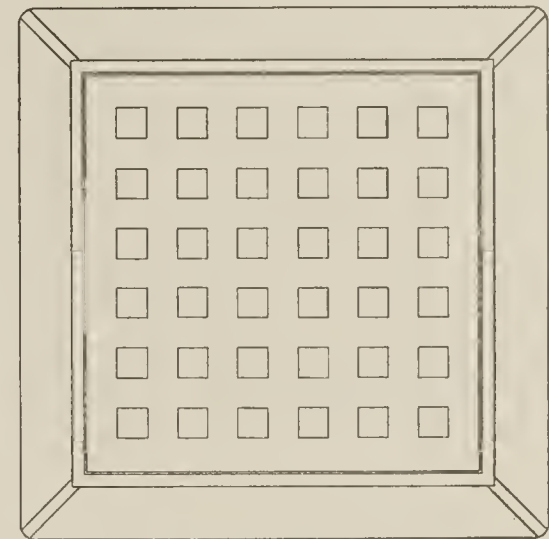
Square Frames and Covers---Grates

HEAVY DESIGN



BELL TYPE FRAME

Pattern Numbers	A	B	C	D	E	X
3030	14½	18	13⅞	12	3	¾
3031	21	24	20	18	4	1
3032	28¾	36	25¾	24	8	1¼
3033	34½	42	32	30	8	1¼
3034	37¾	43	34¾	32½	8	1½
3035	40½	46½	37¾	36	8	1½
3036	43½	49½	41	38½	8	1½
3037	46½	54	43¾	42	8	2
3038	53	60	50	48	8	1½

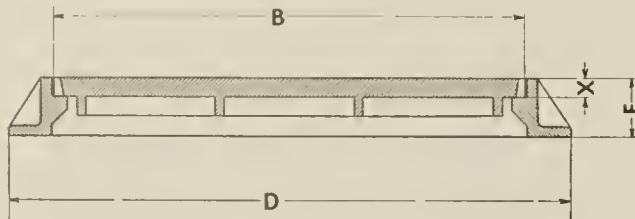
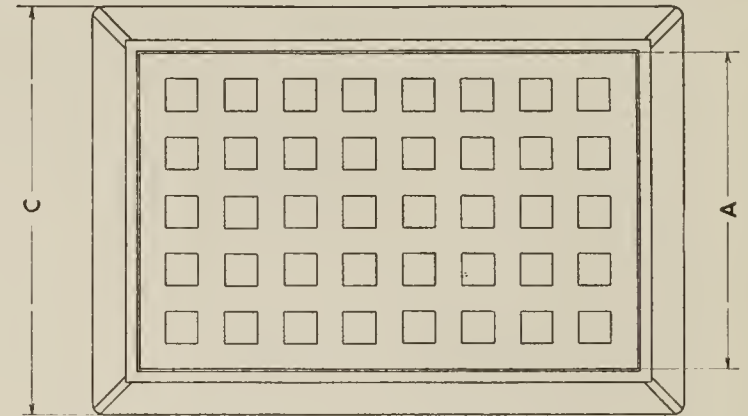
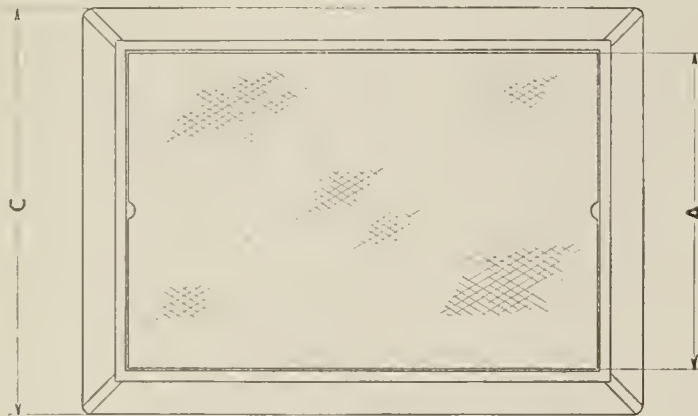


BELL TYPE FRAME

Pattern Numbers	A	B	C	D	E	X
3045	14½	18	13⅞	12	3	¾
3046	21	24	20	18	4	1
3047	28¾	36	25¾	24	8	1¼
3048	34½	42	32	30	8	1¼
3049	37¾	43	34¾	32½	8	1½
3050	40½	46½	37¾	36	8	1½
3051	43½	49½	41	38½	8	1½
3052	46½	54	43¾	42	8	2
3053	53	60	50	48	8	1½

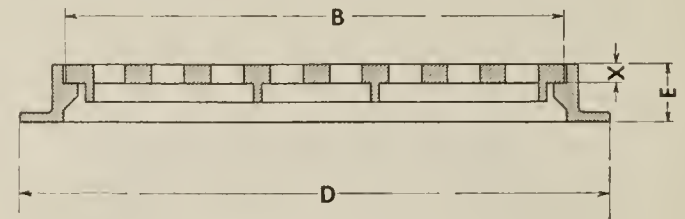
Heavy Rectangular Frames---Covers---Grates

SHALLOW TYPE FRAME



SOLID COVER

Pattern Numbers	A	B	C	D	E	X
3060	12	18	18	24	4	1
3061	12	24	18	30	4	1 ½
3062	18	24	24	30	4	1 ½
3063	18	30	24	36	4	1 ¼
3064	24	30	30	36	4 ½	1 ¼
3065	24	36	31	43	4 ½	1 ½
3066	24	48	31	55	4 ½	1 ½
3067	30	36	36	42	4 ½	1 ½
3068	30	42	36	48	4 ½	1 ½
3069	30	48	38	56	5	1 ½
3070	36	48	42	54	5	1 ½

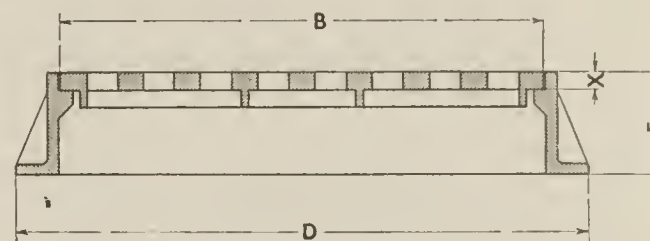
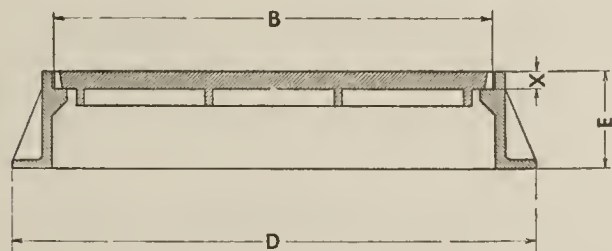
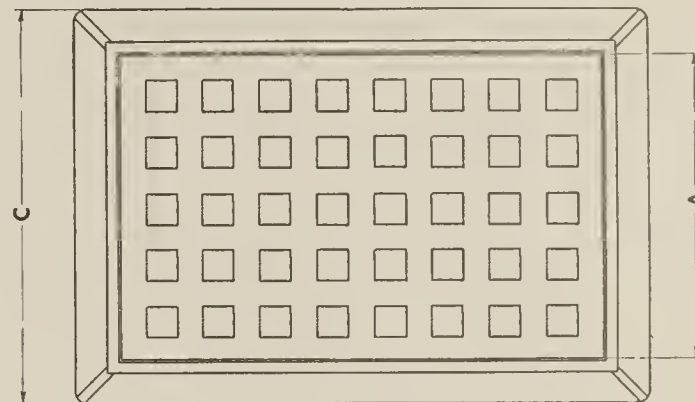


GRATING COVER

Pattern Numbers	A	B	C	D	E	X
3080	12	18	18	24	4	1
3081	12	24	18	30	4	1 ½
3082	18	24	24	30	4	1 ½
3083	18	30	24	36	4	1 ¼
3084	24	30	30	36	4 ½	1 ¼
3085	24	36	31	43	4 ½	1 ½
3086	24	48	31	55	4 ½	1 ½
3087	30	36	36	42	4 ½	1 ½
3088	30	42	36	48	4 ½	1 ½
3089	30	48	38	56	5	1 ½
3090	36	48	42	54	5	1 ½

Heavy Rectangular Frames---Covers---Grates

DEEP TYPE FRAME



SOLID COVER

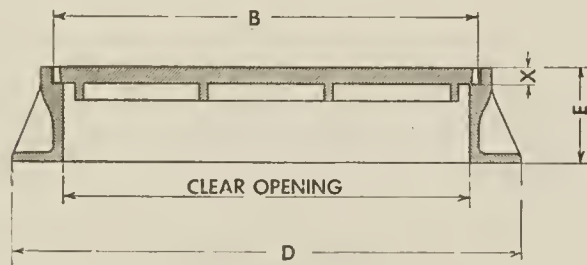
Pattern Numbers	A	B	C	D	E	X
3100	12	18	18	24	8	1
3101	12	24	18	30	8	1 ½
3102	18	24	24	30	8	1 ½
3103	18	30	24	36	8	1 ¼
3104	24	30	30	36	8	1 ¼
3105	24	36	31	43	8	1 ½
3106	24	48	31	55	8	1 ½
3107	30	36	36	42	8	1 ½
3108	30	42	36	48	8	1 ½
3109	30	48	38	56	8	1 ½
3110	36	48	42	54	8	1 ½

GRATING COVER

Pattern Numbers	A	B	C	D	E	X
3120	12	18	18	24	8	1
3121	12	24	18	30	8	1 ½
3122	18	24	24	30	8	1 ½
3123	18	30	24	36	8	1 ¼
3124	24	30	30	36	8	1 ¼
3125	24	36	31	43	8	1 ½
3126	24	48	31	55	8	1 ½
3127	30	36	36	42	8	1 ½
3128	30	42	36	48	8	1 ½
3129	30	48	38	56	8	1 ½
3130	36	48	42	54	8	1 ½

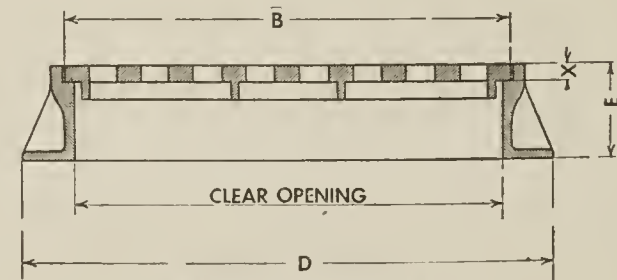
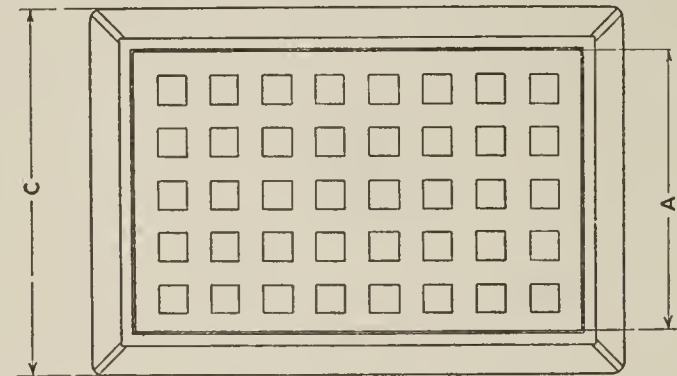
Heavy Rectangular Frames---Covers---Grates

DEEP BELL TYPE FRAME



SOLID COVER

Pattern Numbers	A	B	C	D	E	X	Clear Opening
3140	13 3/4	19 3/4	18	24	8	1	12 x 18
3141	13 3/4	25 3/4	18	30	8	1	12 x 24
3142	19 3/4	25 3/4	24	30	8	1 1/4	18 x 24
3143	19 3/4	31 3/4	24	37	8	1 1/4	18 x 30
3144	25 3/4	31 3/4	31	37	8	1 1/2	24 x 30
3145	25 3/4	37 3/4	32	44	8	1 1/2	24 x 36
3146	25 3/4	49 3/4	32	56	8	1 1/2	24 x 48
3147	31 3/4	37 3/4	37	43	8	1 1/2	30 x 36
3148	31 3/4	49 3/4	37	55	8	1 1/2	30 x 48
3149	37 3/4	49 3/4	43	55	8	1 1/2	36 x 48
3150	37 3/4	61 3/4	43	67	8	1 1/2	36 x 60

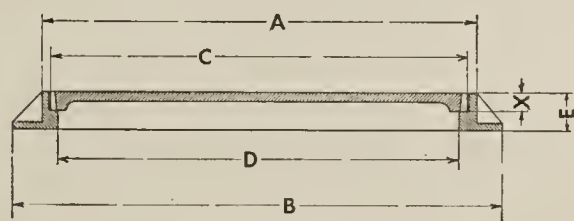


GRATING COVER

Pattern Numbers	A	B	C	D	E	X	Clear Opening
3160	13 3/4	19 3/4	18	24	8	1	12 x 18
3161	13 3/4	25 3/4	18	30	8	1	12 x 24
3162	19 3/4	25 3/4	24	30	8	1 1/4	18 x 24
3163	19 3/4	31 3/4	24	37	8	1 1/4	18 x 30
3164	25 3/4	31 3/4	31	37	8	1 1/2	24 x 30
3165	25 3/4	37 3/4	32	44	8	1 1/2	24 x 36
3166	25 3/4	49 3/4	32	56	8	1 1/2	24 x 48
3167	31 3/4	37 3/4	37	43	8	1 1/2	30 x 36
3168	31 3/4	49 3/4	37	55	8	1 1/2	30 x 48
3169	37 3/4	49 3/4	43	55	8	1 1/2	36 x 48
3170	37 3/4	61 3/4	43	67	8	1 1/2	36 x 60

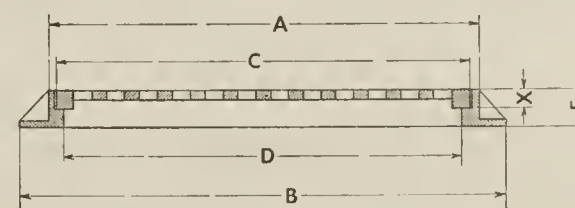
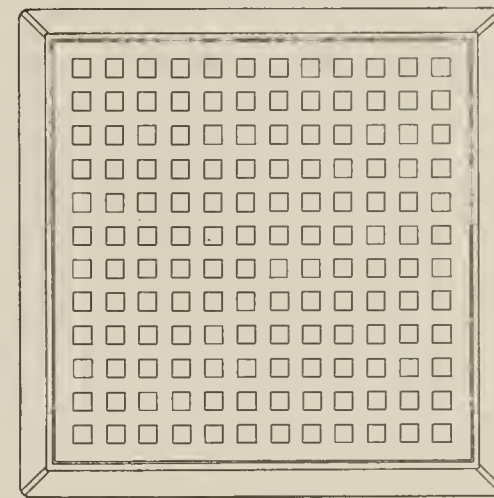
Square Frames---Covers---Grates

LIGHT DESIGN



SOLID COVER

Pattern Numbers	A	B	C	D	E	X
3180	10½	14	9¼	8	3	1¼
3181	14¾	18	13¼	12	3	1½
3182	20½	24	19¼	18	3	1½
3183	26¾	30	25¼	24	3	1½
3184	32¾	36	31¼	30	3	1½
3185	39¼	42	37¼	36	3	1½
3186	45	48	43¼	42	3	1½
3187	51	54	49¼	48	3	1½

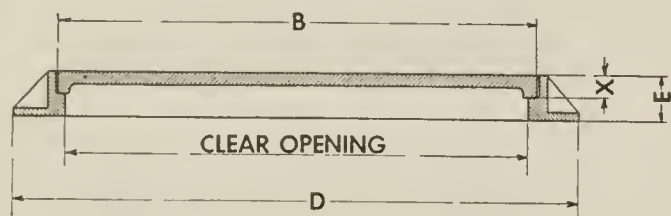
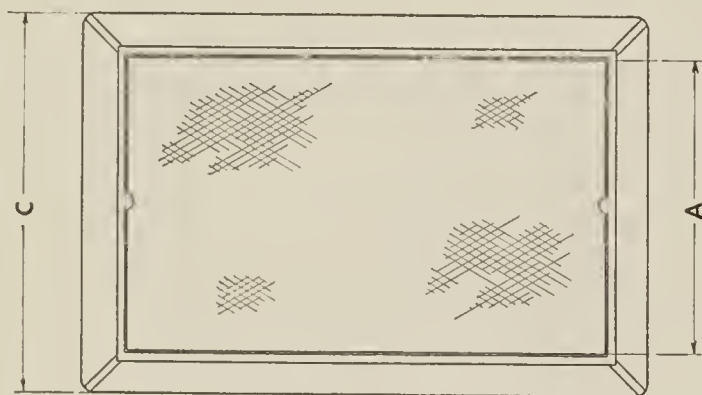


GRATING COVER

Pattern Numbers	A	B	C	D	E	X
3190	10½	14	9¼	8	3	1¼
3191	14¾	18	13¼	12	3	1½
3192	20½	24	19¼	18	3	1½
3193	26¾	30	25¼	24	3	1½
3194	32¾	36	31¼	30	3	1½
3195	39¼	42	37¼	36	3	1½
3196	45	48	43¼	42	3	1½
3197	51	54	49¼	48	3	1½

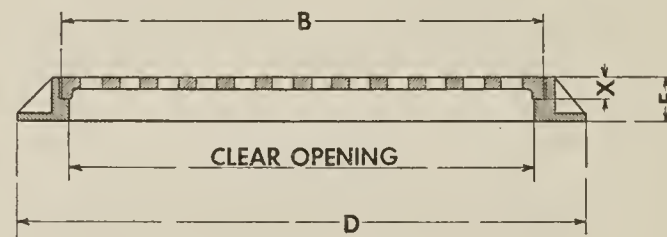
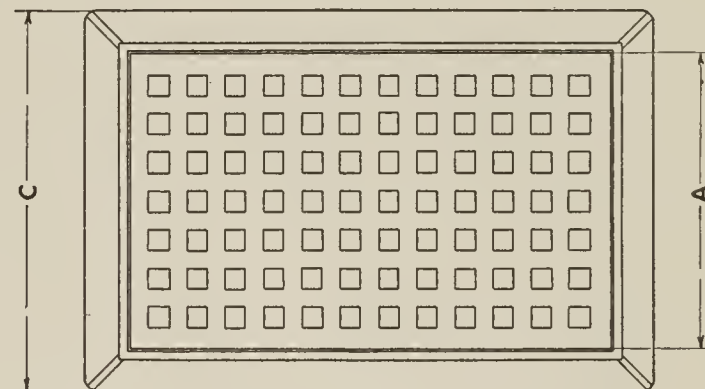
Rectangular Frames---Covers---Grates

LIGHT DESIGN



SOLID COVER

Pattern Numbers	A	B	C	D	E	X	Clear Opening
3200	7 1/4	13 1/4	12	18	3	1 1/2	6 x 12
3201	13 1/4	19 1/4	18	24	3	1 1/2	12 x 18
3202	13 1/4	25 1/4	18	30	3	1 1/2	12 x 24
3203	19 1/4	25 1/4	24	30	3	1 1/2	18 x 24
3204	19 1/4	31 1/4	24	36	3	1 1/2	18 x 30
3205	25 1/4	31 1/4	30	36	3	1 1/2	24 x 30
3206	25 1/4	37 1/4	30	42	3	1 1/2	24 x 36
3207	31 1/4	37 1/4	36	42	3	1 1/2	30 x 36
3208	31 1/4	49 1/4	36	54	3	1 1/2	30 x 48
3209	37 1/4	49 1/4	42	54	3	1 1/2	36 x 48

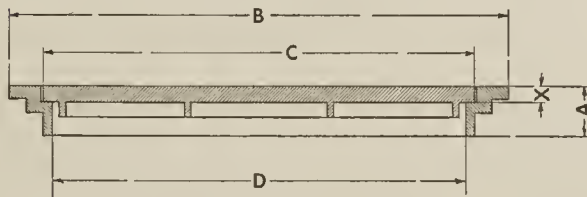


GRATING COVER

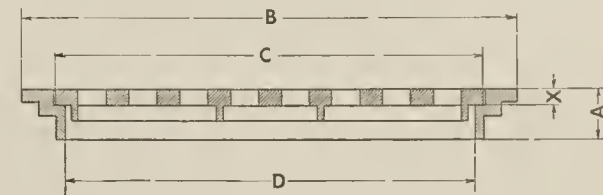
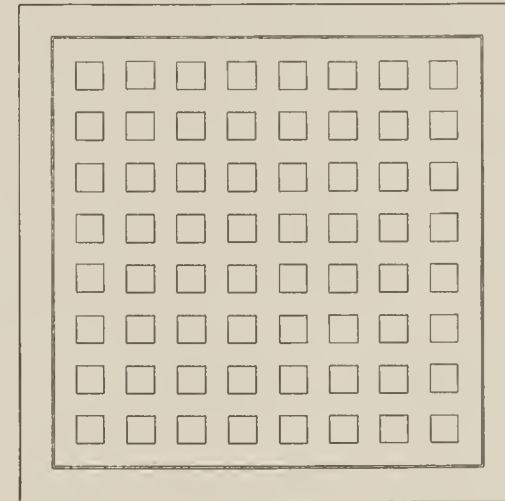
Pattern Numbers	A	B	C	D	E	X	Clear Opening
3215	7 1/4	13 1/4	12	18	3	1 1/2	6 x 12
3216	13 1/4	19 1/4	18	24	3	1 1/2	12 x 18
3217	13 1/4	25 1/4	18	30	3	1 1/2	12 x 24
3218	19 1/4	25 1/4	24	30	3	1 1/2	18 x 24
3219	19 1/4	31 1/4	24	36	3	1 1/2	18 x 30
3220	25 1/4	31 1/4	30	36	3	1 1/2	24 x 30
3221	25 1/4	37 1/4	30	42	3	1 1/2	24 x 36
3222	31 1/4	37 1/4	36	42	3	1 1/2	30 x 36
3223	31 1/4	49 1/4	36	54	3	1 1/2	30 x 48
3224	37 1/4	49 1/4	42	54	3	1 1/2	36 x 48

Slab Type Square Frames---Covers---Grates

HEAVY DESIGN



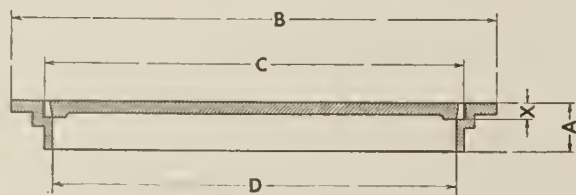
Pattern Numbers	A	B	C	D	X
3230	4½	19	13⅞	12	1
3231	4½	24	20	18	1
3232	4½	31	25¾	24	1¼
3233	4½	37	31¾	30	1¼
3234	4½	43	37¾	36	1½
3235	4½	49	43¾	42	1½
3236	4½	55	49¾	48	1½



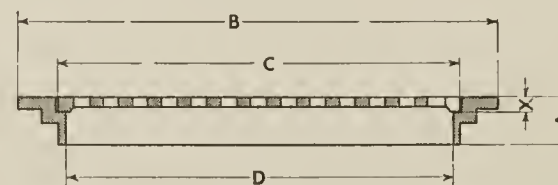
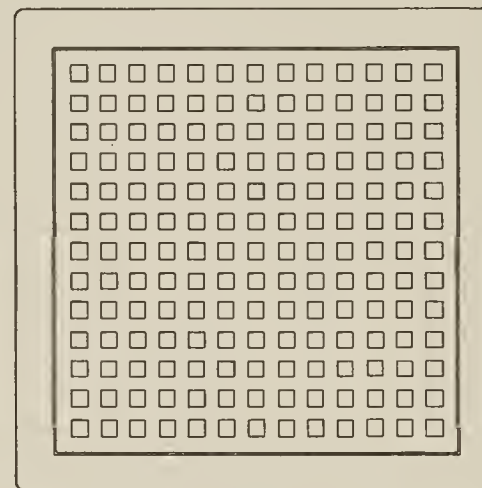
Pattern Numbers	A	B	C	D	X
3245	4½	19	13⅞	12	1
3246	4½	24	20	18	1
3247	4½	31	25¾	24	1¼
3248	4½	37	31¾	30	1¼
3249	4½	43	37¾	36	1½
3250	4½	49	43¾	42	1½
3251	4½	55	49¾	48	1½

Slab Type Square Frames---Covers---Grates

LIGHT DESIGN



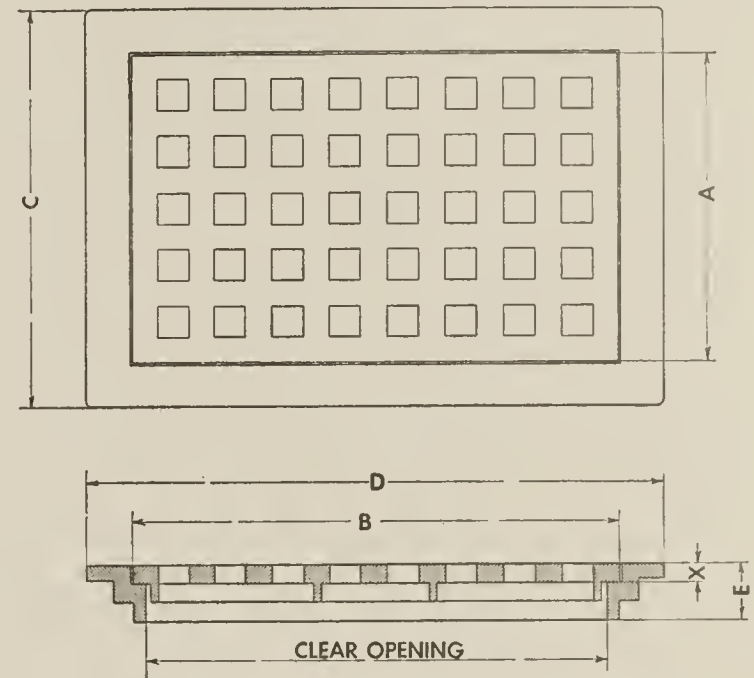
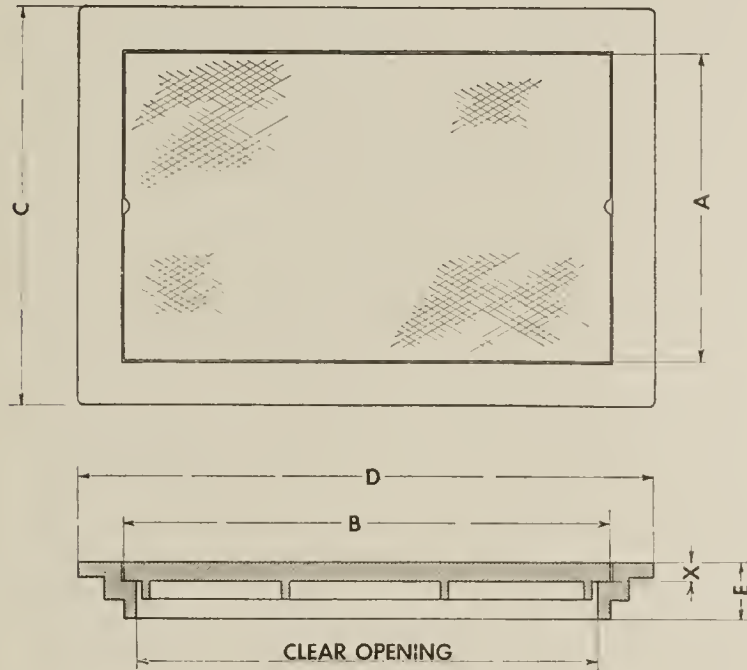
Pattern Numbers	A	B	C	D	X
3260	4½	19	13 ⅞	12	1
3261	4½	24	20	18	1
3262	4½	31	25 ¾	24	1 ¼
3263	4½	37	31 ¾	30	1 ¼
3264	4½	43	37 ¾	36	1 ½
3265	4½	49	43 ¾	42	1 ½
3266	4½	55	49 ¾	48	1 ½



Pattern Numbers	A	B	C	D	X
3280	4½	19	13 ⅞	12	1
3281	4½	24	20	18	1
3282	4½	31	25 ¾	24	1 ¼
3283	4½	37	31 ¾	30	1 ¼
3284	4½	43	37 ¾	36	1 ½
3285	4½	49	43 ¾	42	1 ½
3286	4½	55	49 ¾	48	1 ½

Slab Type Rectangular Frames---Covers---Grates

HEAVY DESIGN



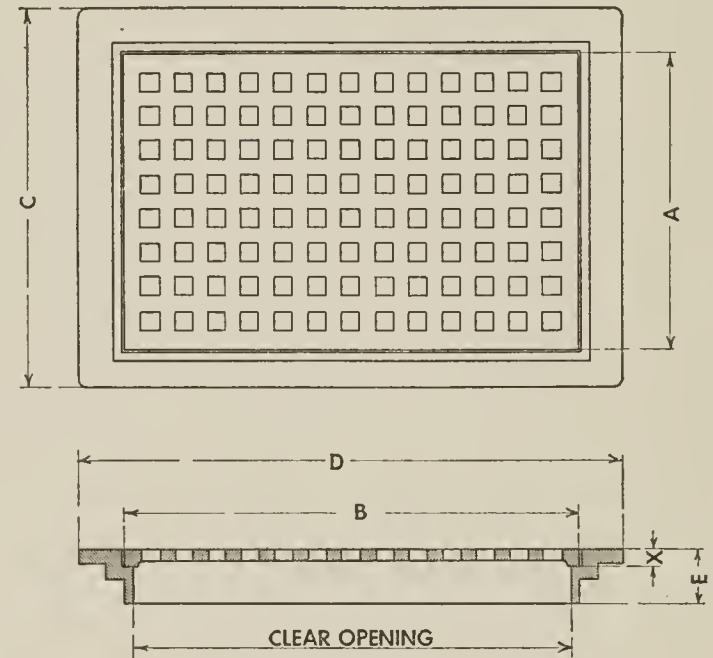
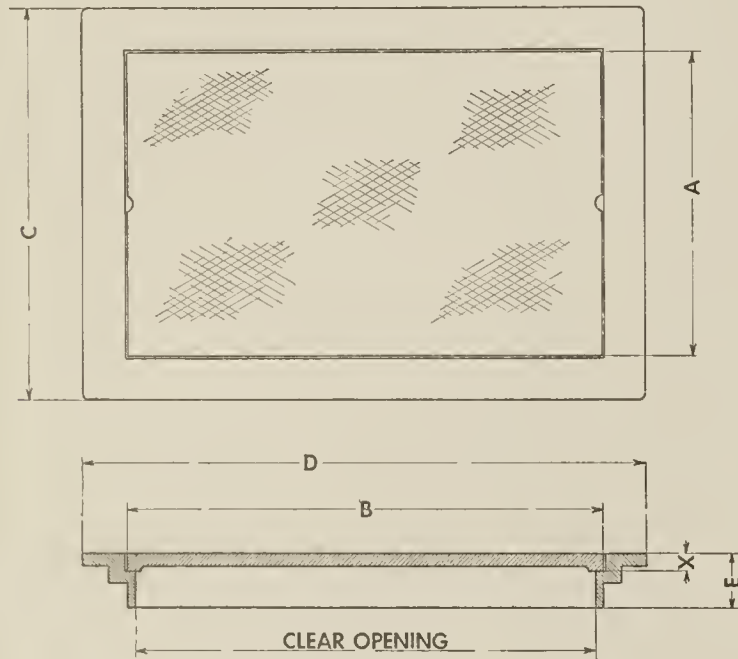
Pattern Numbers	A	B	C	D	E	X	Clear Opening
3300	13 3/4	19 3/4	18	24	3 1/2	1	12 x 18
3301	13 3/4	25 3/4	18	30	3 1/2	1	12 x 24
3302	19 3/4	25 3/4	24	30	4 1/2	1 1/4	18 x 24
3303	19 3/4	31 3/4	24	37	4 1/2	1 1/4	18 x 30
3304	25 3/4	31 3/4	31	37	4 1/2	1 1/2	24 x 30
3305	25 3/4	37 3/4	32	44	4 1/2	1 1/2	24 x 36
3306	25 3/4	49 3/4	32	56	4 1/2	1 1/2	24 x 48
3307	31 3/4	37 3/4	37	43	4 1/2	1 1/2	30 x 36
3308	31 3/4	49 3/4	37	55	4 1/2	1 1/2	30 x 48
3309	37 3/4	49 3/4	43	55	4 1/2	1 1/2	36 x 48
3310	37 3/4	61 3/4	43	67	4 1/2	1 1/2	36 x 60

Pattern Numbers	A	B	C	D	E	X	Clear Opening
3325	13 3/4	19 3/4	18	24	3 1/2	1	12 x 18
3326	13 3/4	25 3/4	18	30	3 1/2	1	12 x 24
3327	19 3/4	25 3/4	24	30	4 1/2	1 1/4	18 x 24
3328	19 3/4	31 3/4	24	37	4 1/2	1 1/4	18 x 30
3329	25 3/4	31 3/4	31	37	4 1/2	1 1/2	24 x 30
3330	25 3/4	37 3/4	32	44	4 1/2	1 1/2	24 x 36
3331	25 3/4	49 3/4	32	56	4 1/2	1 1/2	24 x 48
3332	31 3/4	37 3/4	37	43	4 1/2	1 1/2	30 x 36
3333	31 3/4	49 3/4	37	55	4 1/2	1 1/2	30 x 48
3334	37 3/4	49 3/4	43	55	4 1/2	1 1/2	36 x 48
3335	37 3/4	61 3/4	43	67	4 1/2	1 1/2	36 x 60

Covers and Grates on Pattern Numbers 3309, 3310, 3334 and 3335 made in convenient sections for handling.

Slab Type Rectangular Frames---Covers---Grates

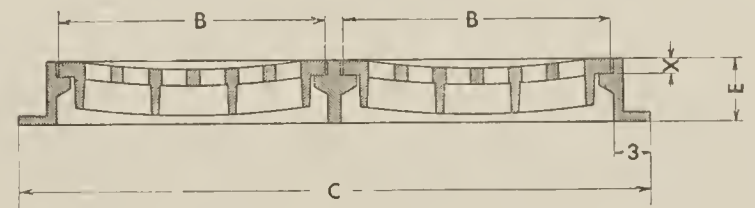
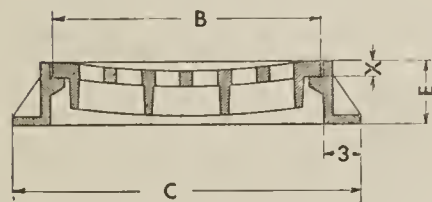
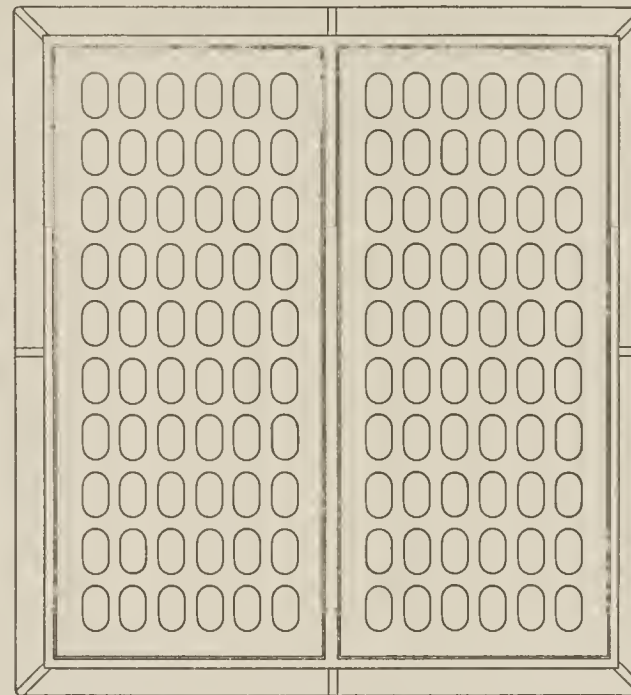
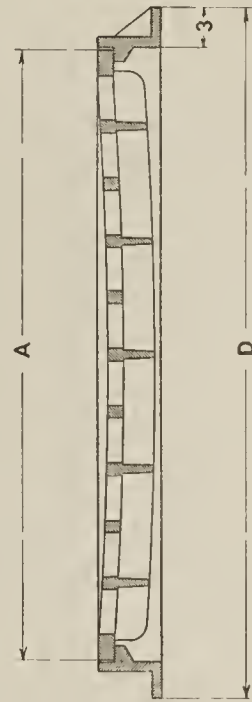
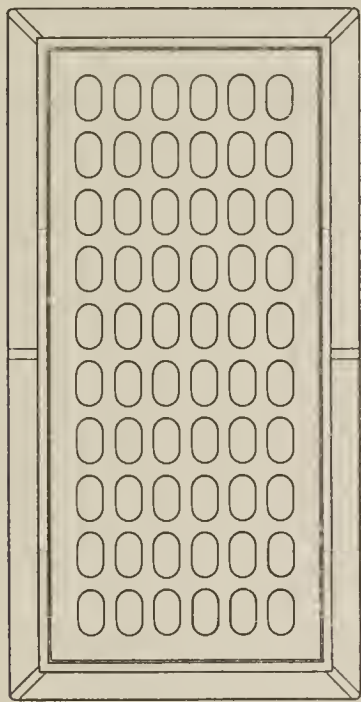
LIGHT DESIGN



Pattern Numbers	A	B	C	D	E	X	Clear Opening
3350	13 3/4	19 3/4	18	24	3 1/2	1	12 x 18
3351	13 3/4	25 3/4	18	30	3 1/2	1	12 x 24
3352	19 3/4	25 3/4	24	30	4 1/2	1 1/4	18 x 24
3353	19 3/4	31 3/4	24	37	4 1/2	1 1/4	18 x 30
3354	25 3/4	31 3/4	31	37	4 1/2	1 1/2	24 x 30
3355	25 3/4	37 3/4	32	44	4 1/2	1 1/2	24 x 36
3356	25 3/4	49 3/4	32	56	4 1/2	1 1/2	24 x 48
3357	31 3/4	37 3/4	37	43	4 1/2	1 1/2	30 x 36
3358	31 3/4	49 3/4	37	55	4 1/2	1 1/2	30 x 48
3359	37 3/4	49 3/4	43	55	4 1/2	1 1/2	36 x 48
3360	37 3/4	61 3/4	43	67	4 1/2	1 1/2	36 x 60

Pattern Numbers	A	B	C	D	E	X	Clear Opening
3375	13 3/4	19 3/4	18	24	3 1/2	1	12 x 18
3376	13 3/4	25 3/4	18	30	3 1/2	1	12 x 24
3377	19 3/4	25 3/4	24	30	4 1/2	1 1/4	18 x 24
3378	19 3/4	31 3/4	24	37	4 1/2	1 1/4	18 x 30
3379	25 3/4	31 3/4	31	37	4 1/2	1 1/2	24 x 30
3380	25 3/4	37 3/4	32	44	4 1/2	1 1/2	24 x 36
3381	25 3/4	49 3/4	32	56	4 1/2	1 1/2	24 x 48
3382	31 3/4	37 3/4	37	43	4 1/2	1 1/2	30 x 36
3383	31 3/4	49 3/4	37	55	4 1/2	1 1/2	30 x 48
3384	37 3/4	49 3/4	43	55	4 1/2	1 1/2	36 x 48
3385	37 3/4	61 3/4	43	67	4 1/2	1 1/2	36 x 60

Heavy Highway Frames and Grates



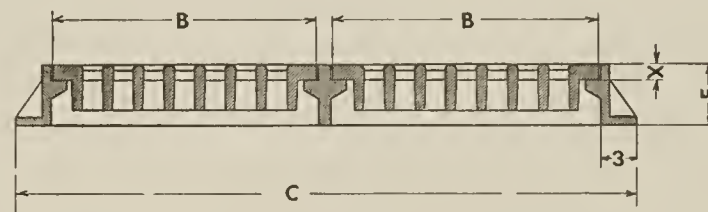
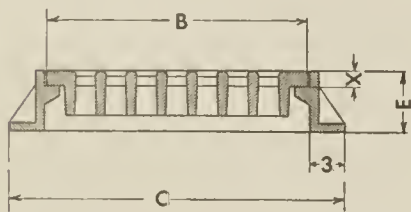
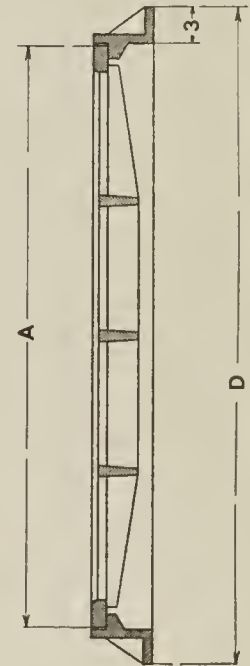
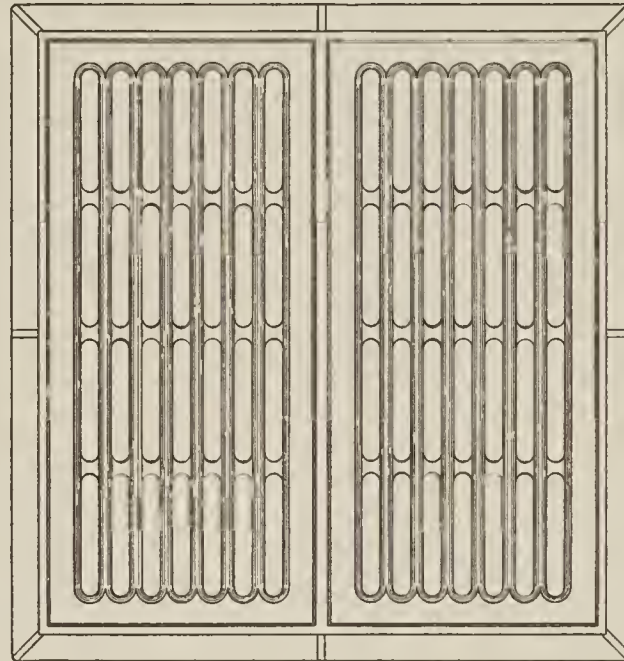
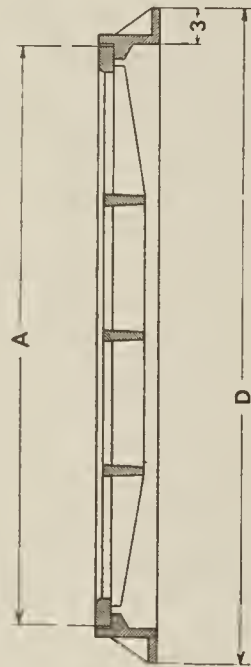
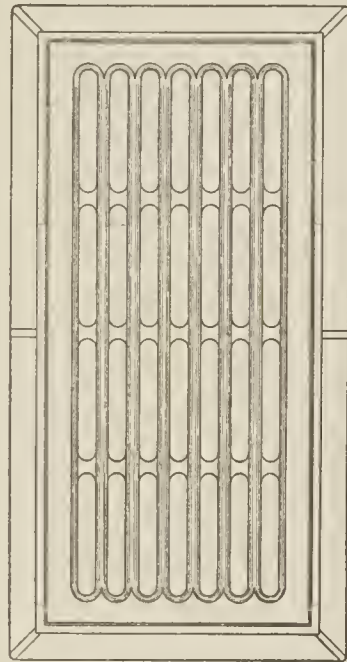
Pattern Numbers		DIMENSIONS					
Concave Grate	Flat Grate	A	B	C	D	E	X
3400	3410	35 1/2	21 3/4	28	42	5	1 1/4
3401	3411	38	21 5/8	30 1/2	46 3/4	5	2
3402	3412	47 3/4	21 3/4	28	54	5	1 1/4
3403	3413	49 1/4	29 3/4	36	55 1/2	5	1 1/4

Pattern Numbers		DIMENSIONS					
Concave Grate	Flat Grate	A	B	C	D	E	X
3420	3422	36	21 3/4	51	42	5	1 1/4
3421	3423	47 3/4	21 3/4	51	54	5	1 1/4

Heavy Highway Frames and Grates

"STREAM FLOW GRATING"

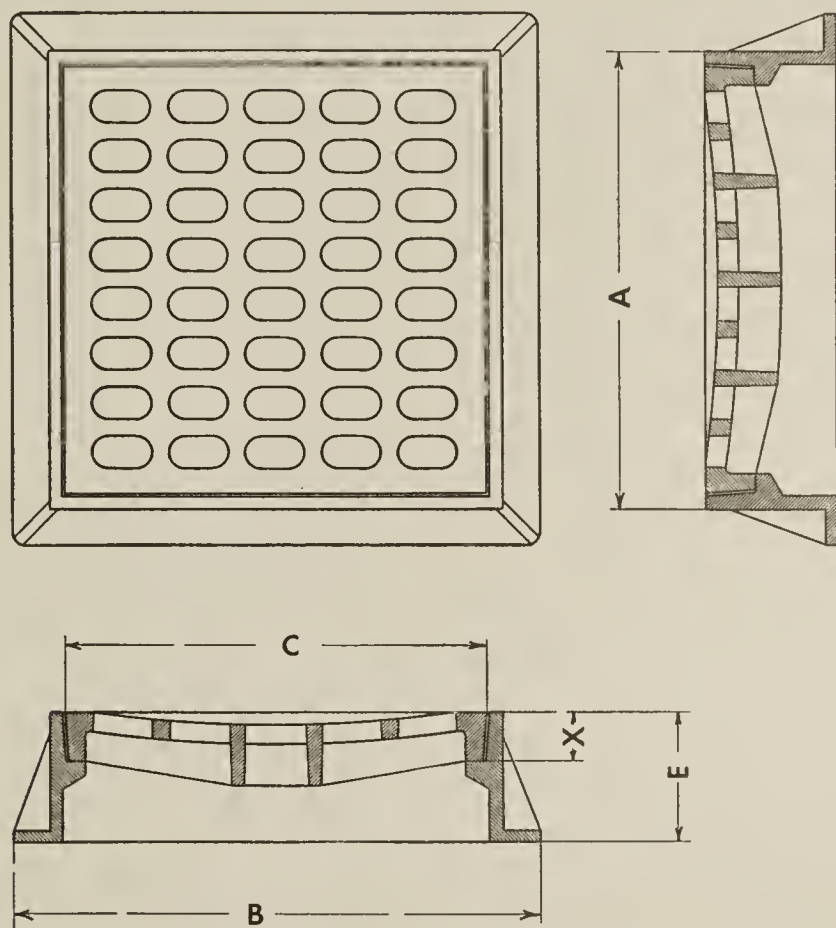
Registered Trade Mark



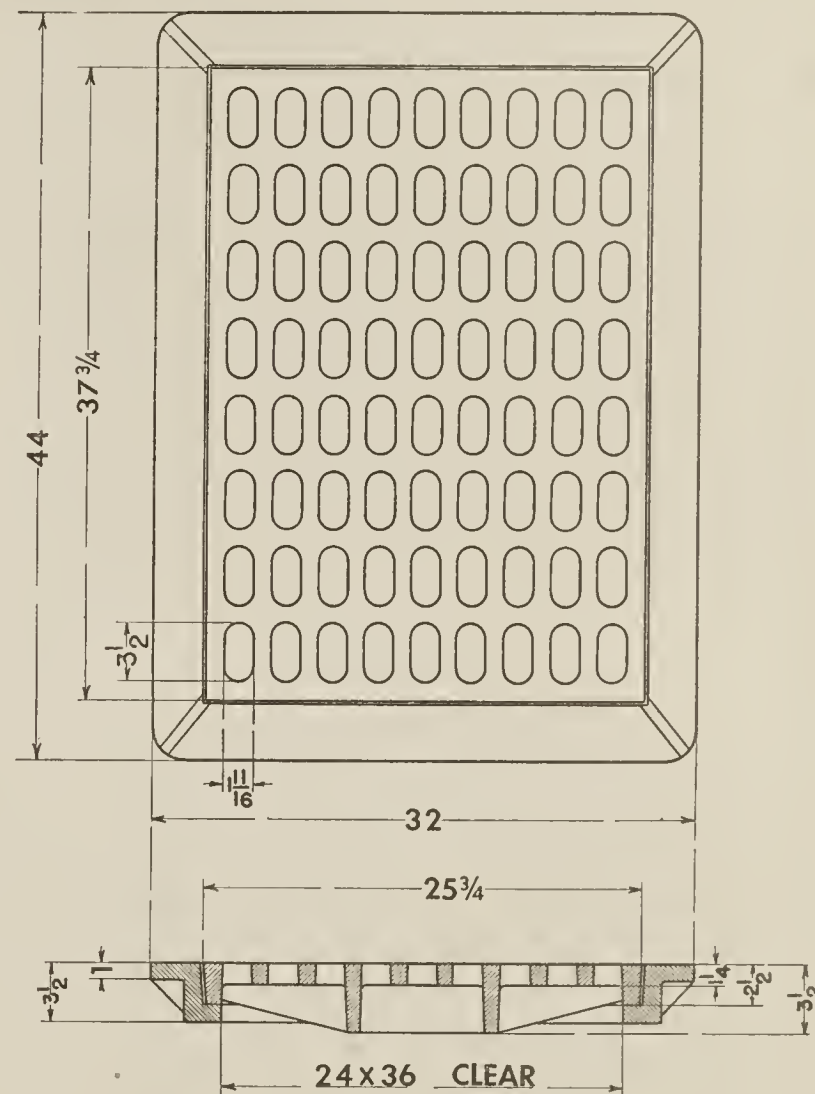
Pattern Numbers	DIMENSIONS					
	A	B	C	D	E	X
3430	34 1/8	20 1/2	28	41 1/2	4	1 1/4
3431	38	21 5/8	30 1/2	46 3/4	5	2
3432	47 3/4	21 3/4	28	54	5	1 1/4
3433	49 1/4	29 3/4	36	55 1/2	5	1 1/4

Pattern Numbers	DIMENSIONS					
	A	B	C	D	E	X
3439	36	21 3/4	51	42	5	1 1/4
3440	47 3/4	21 3/4	51	54	5	1 1/4

Heavy Highway Frames and Grates



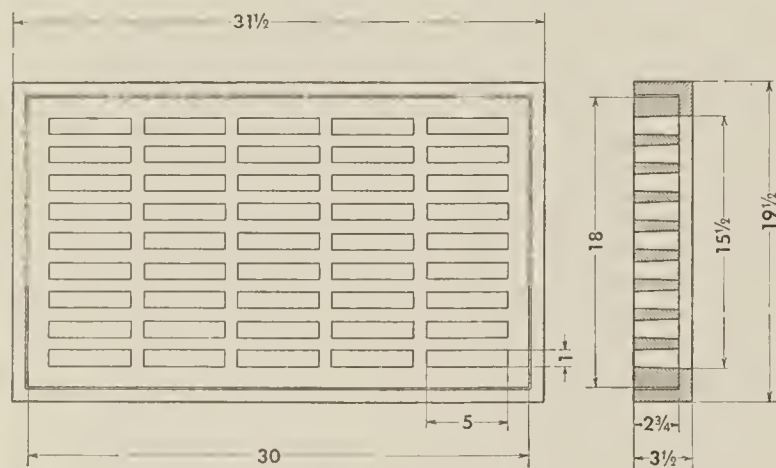
Pattern Numbers		DIMENSIONS				
Concave Grate	Flat Grate	A	B	C	E	X
3450	3460	26 $\frac{1}{4}$	36	24	8	3
3451	3461	32 $\frac{1}{4}$	42	30	8	3
3452	3462	38 $\frac{1}{4}$	48	36	8	3
3453	3463	44 $\frac{1}{4}$	54	42	8	3
3454	3464	50 $\frac{3}{4}$	60	48	8	3



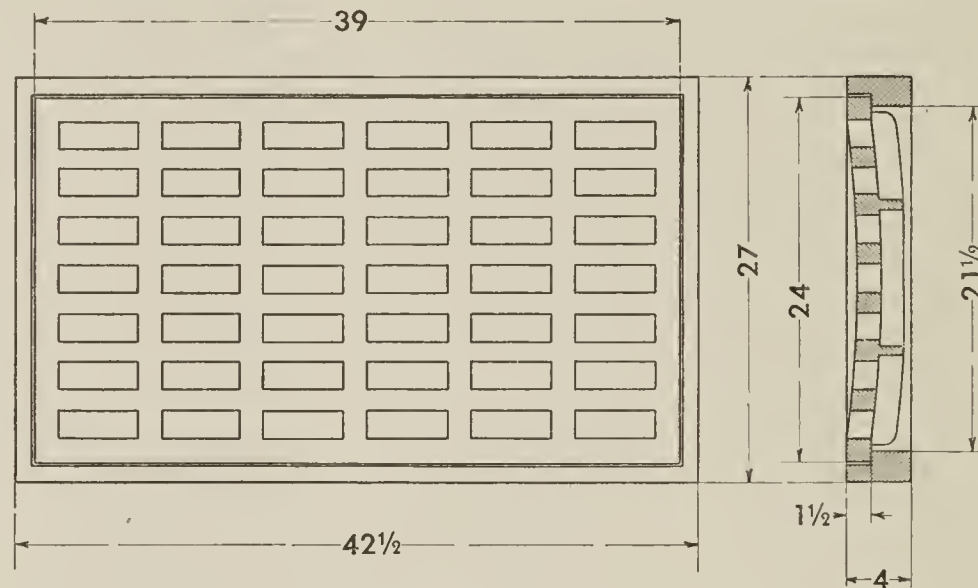
PATTERN 3470

Sectional Grate furnished on Pattern Numbers 3453, 3454, 3463 and 3464.

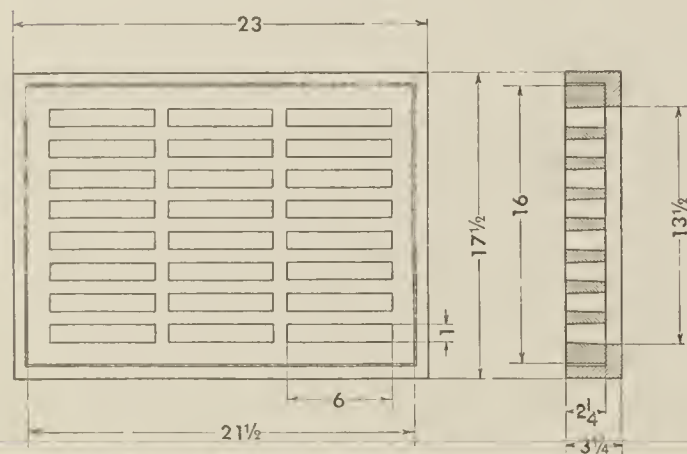
Heavy Rectangular Frames and Grates



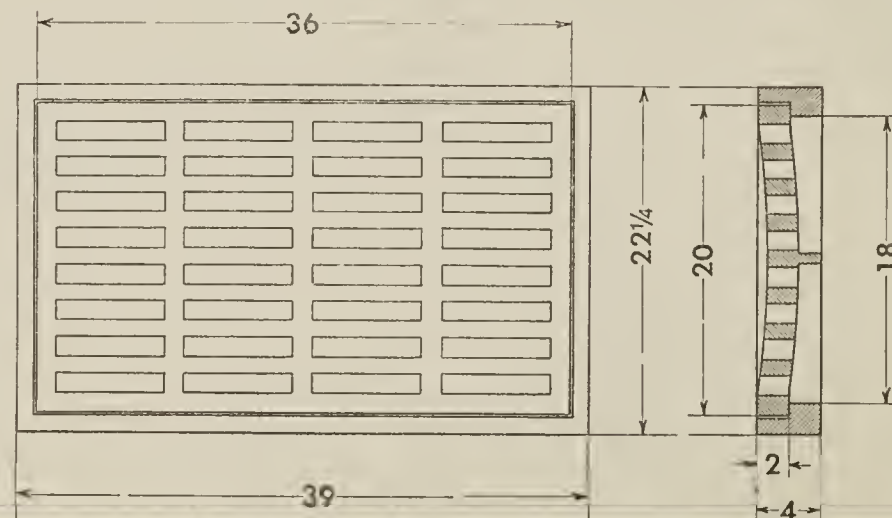
PATTERN 3475



PATTERN 3476



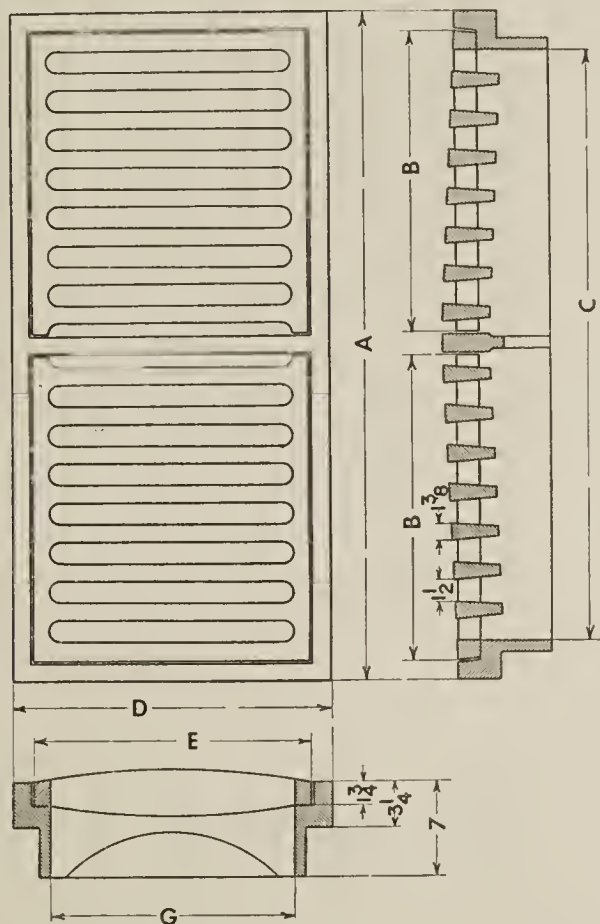
PATTERN 3477



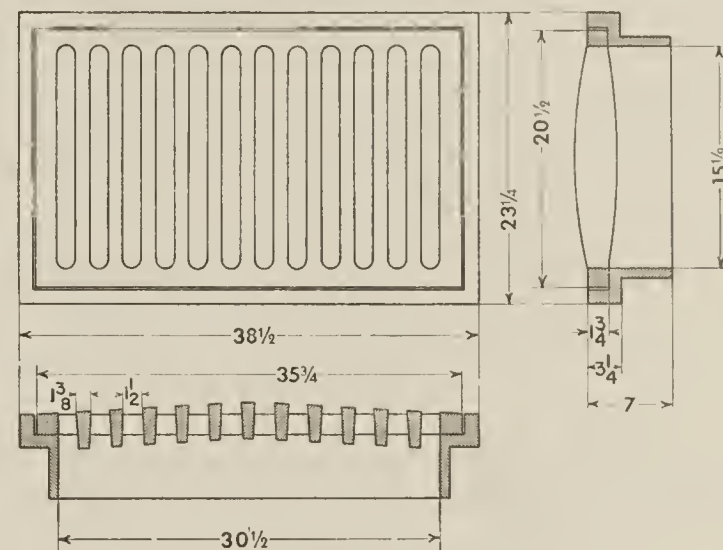
PATTERN 3478

Rectangular Frames and Grates

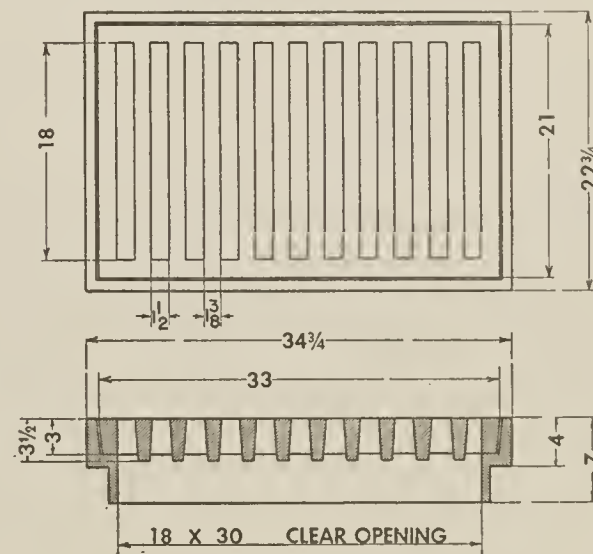
SLAB TYPE — HEAVY DESIGN



Pattern Numbers	A	B	C	D	E	G
3480	50 1/2	23 3/8	42 1/2	23 1/2	20 1/2	15 1/2
3481	62 1/2	28 3/4	54 1/2	23 1/2	20 1/2	15 1/2

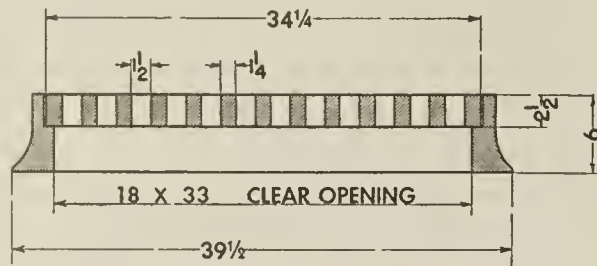
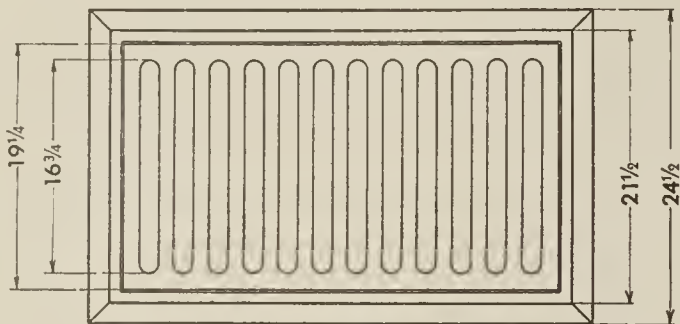


PATTERN 3482

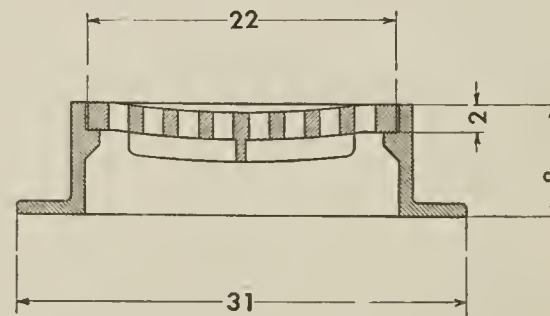
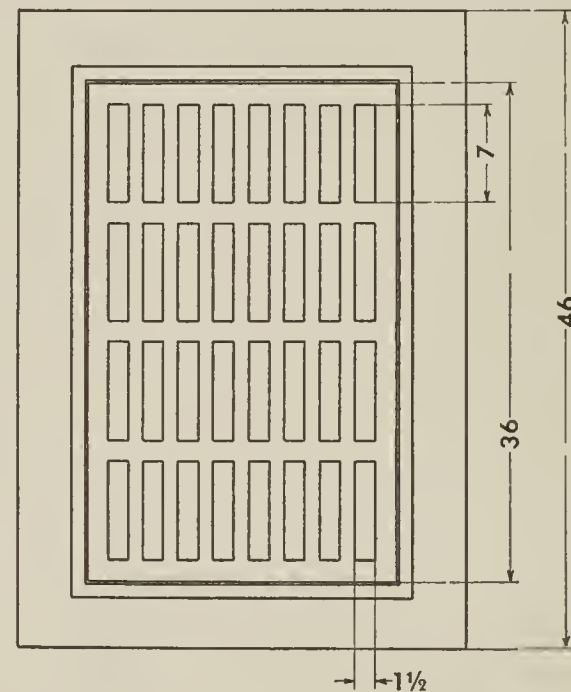


PATTERN 3483

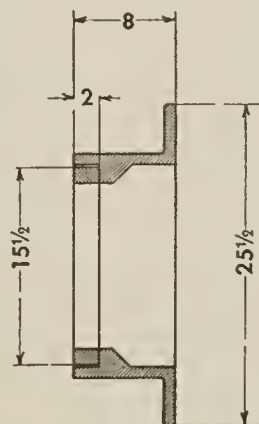
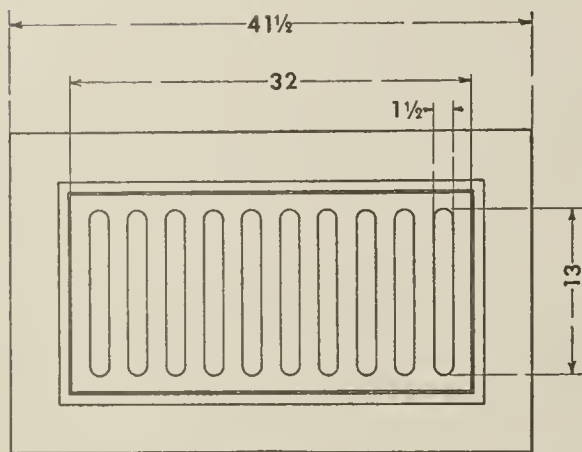
Heavy Highway Frames and Grates



PATTERN 3485

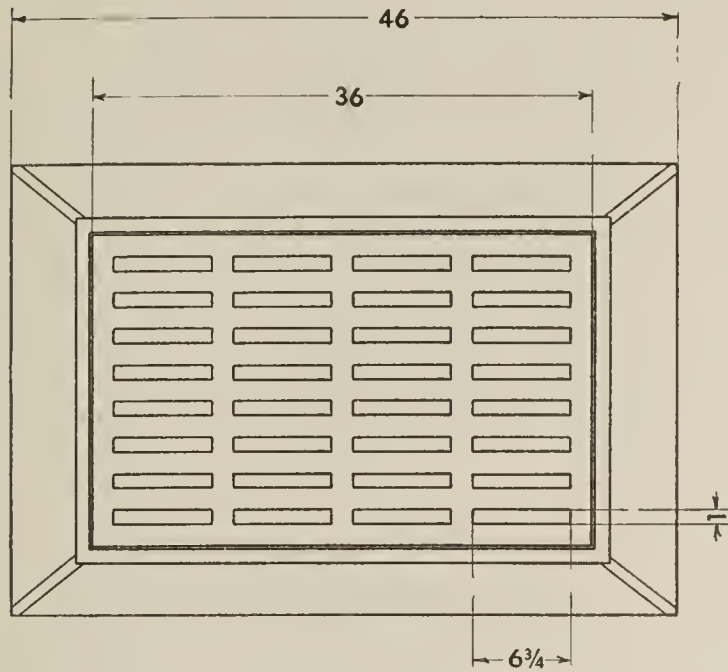


PATTERN 3486

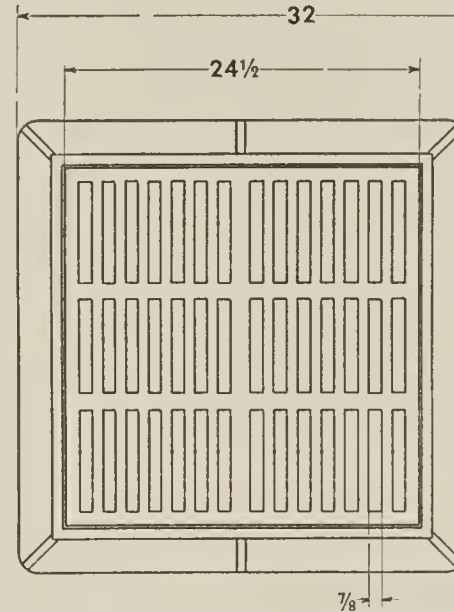
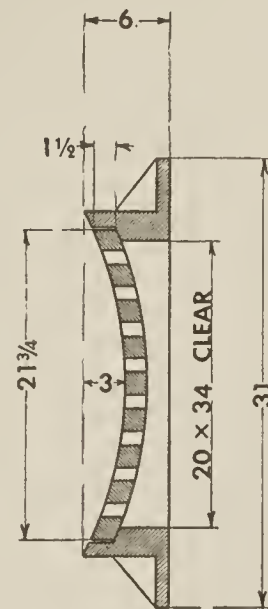


PATTERN 3487

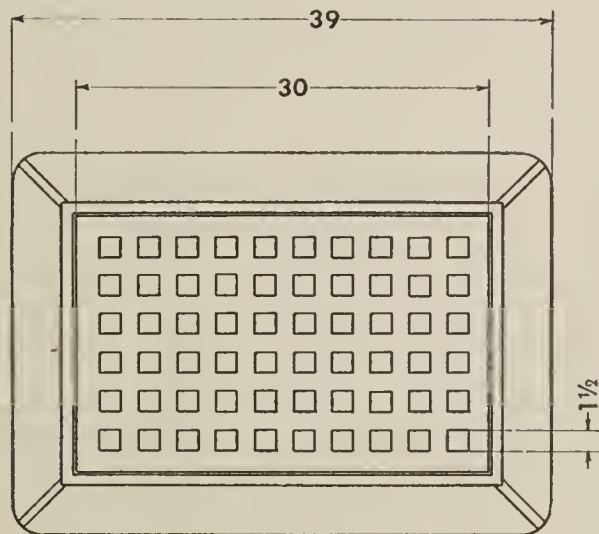
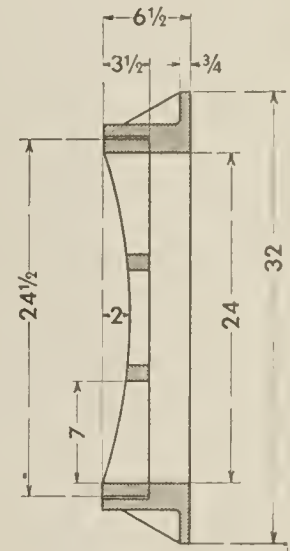
Gutter Type Frames and Grates



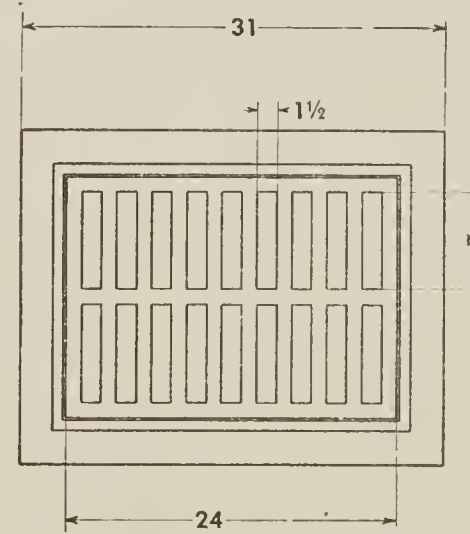
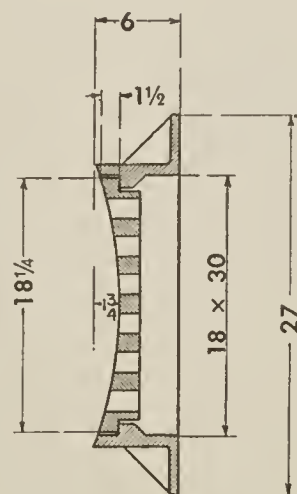
PATTERN 3490



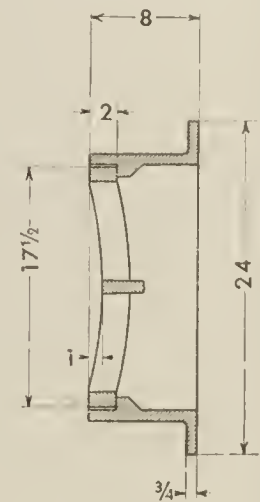
PATTERN 3491



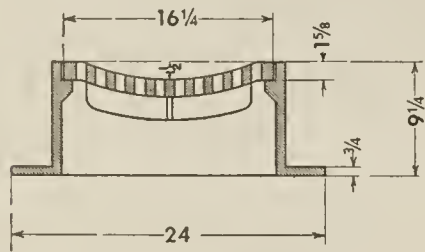
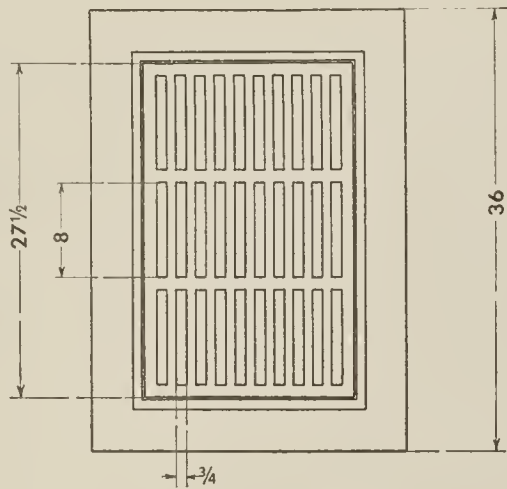
PATTERN 3492



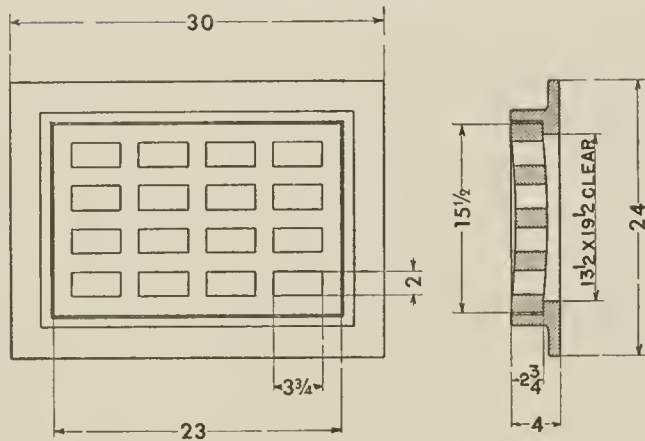
PATTERN 3493



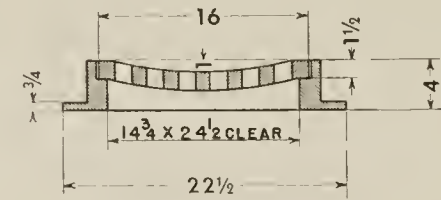
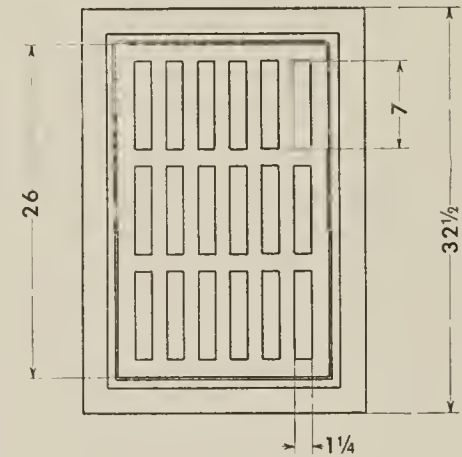
Gutter Type Frames and Grates



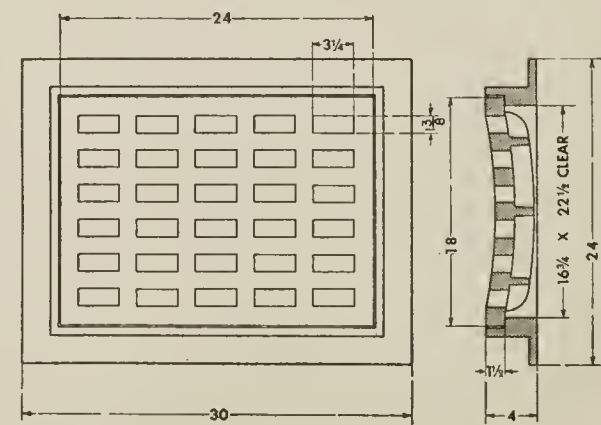
PATTERN 3494



PATTERN 3496

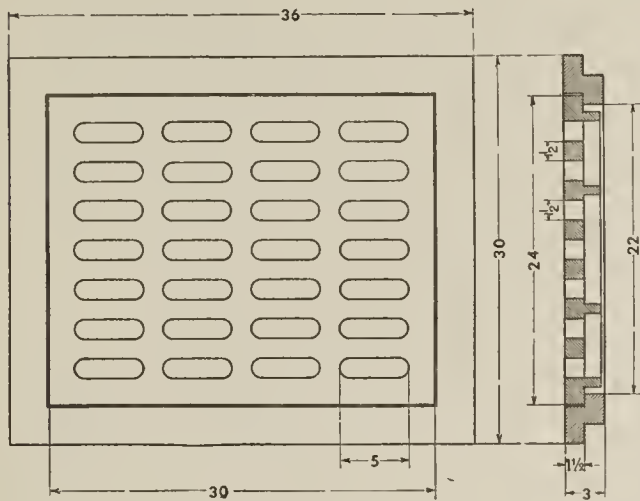


PATTERN 3495

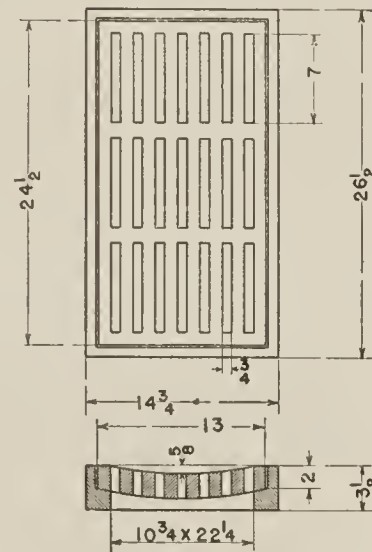


PATTERN 3497

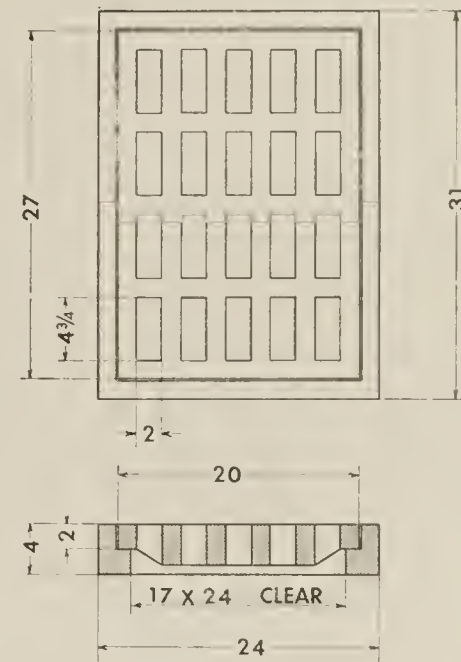
Gutter Type Frames and Grates



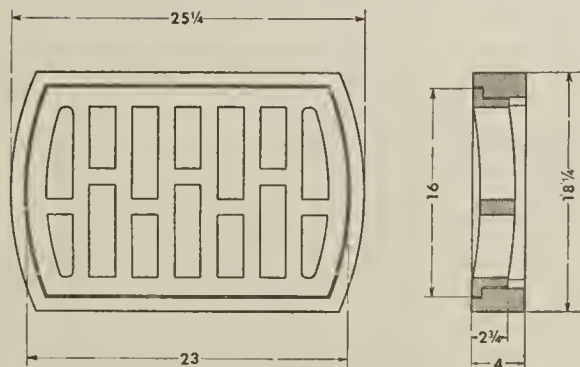
PATTERN 4100



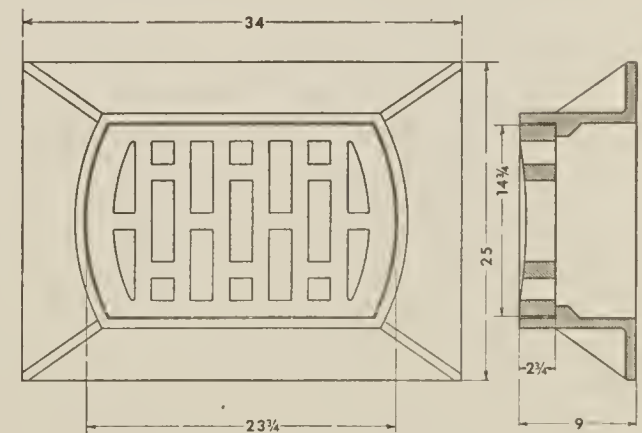
PATTERN 4101



PATTERN 4102

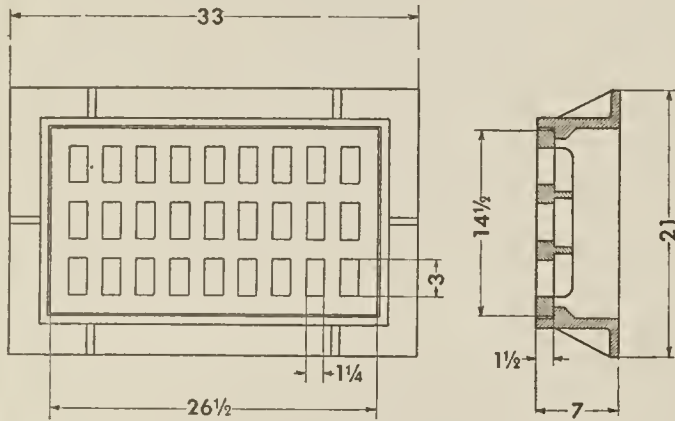


PATTERN 4103

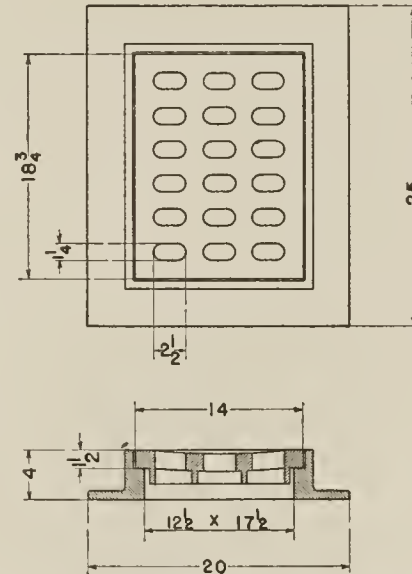


PATTERN 4104

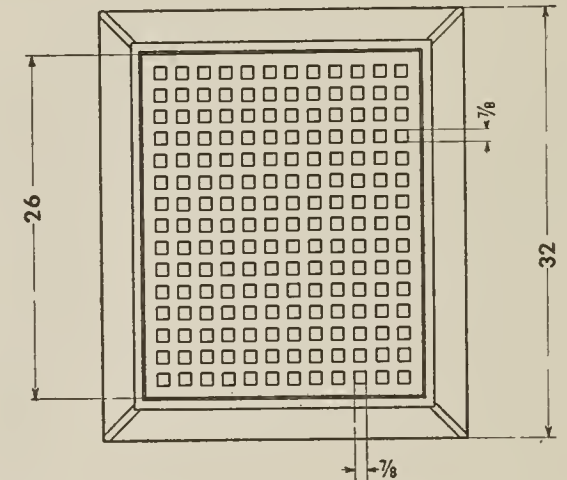
Park and Lawn Drains



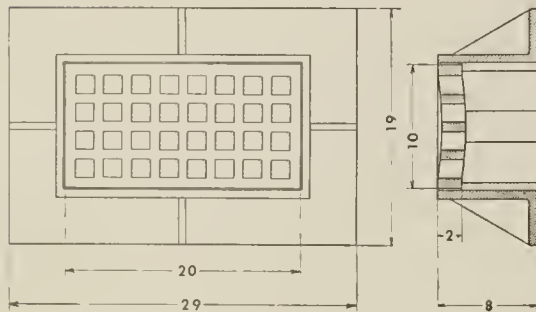
PATTERN 4115



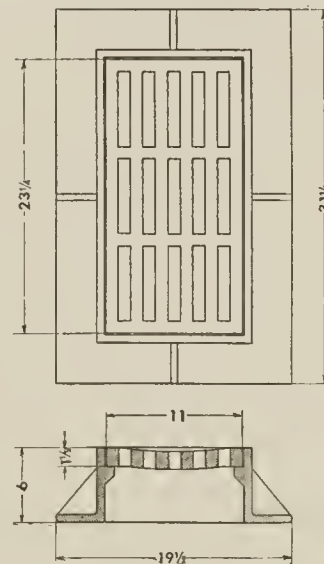
PATTERN 4116



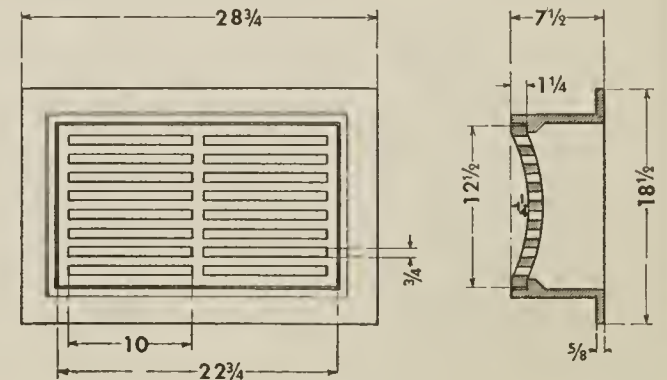
PATTERN 4117



PATTERN 4118



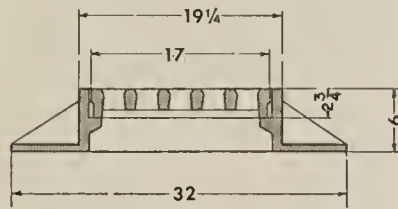
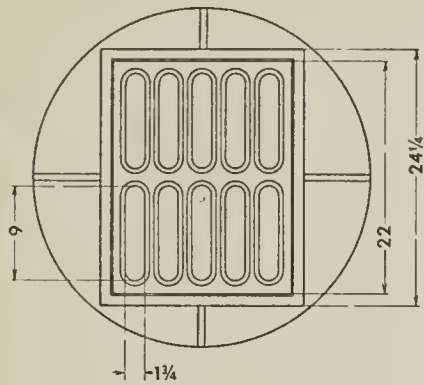
PATTERN 4119



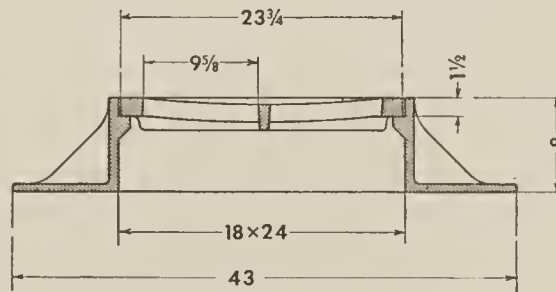
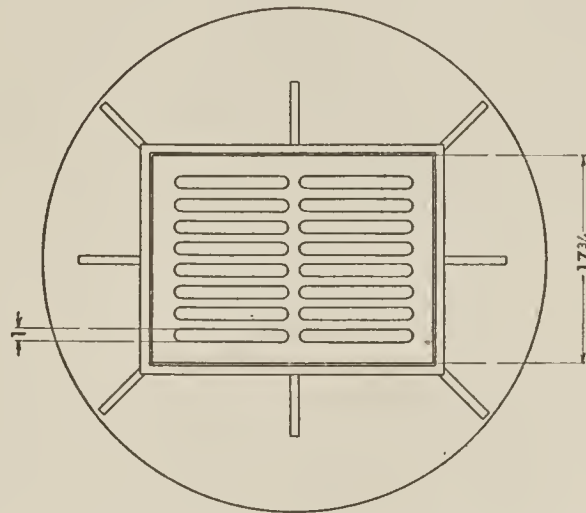
PATTERN 4120

Park and Lawn Drains

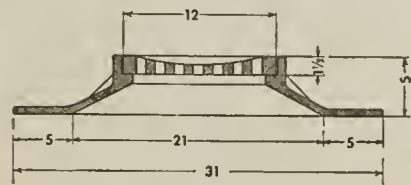
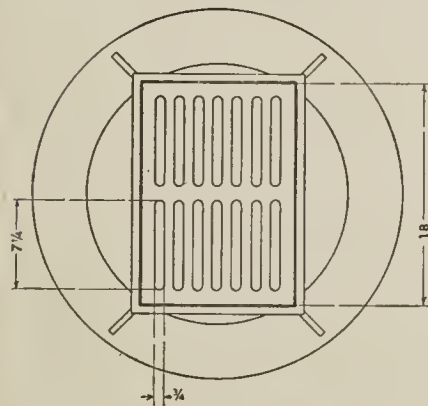
CIRCULAR FLANGE



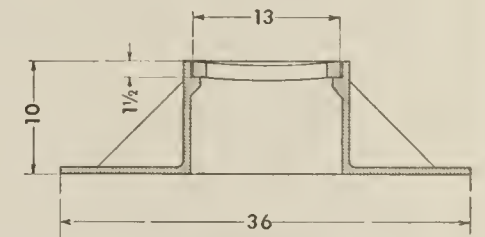
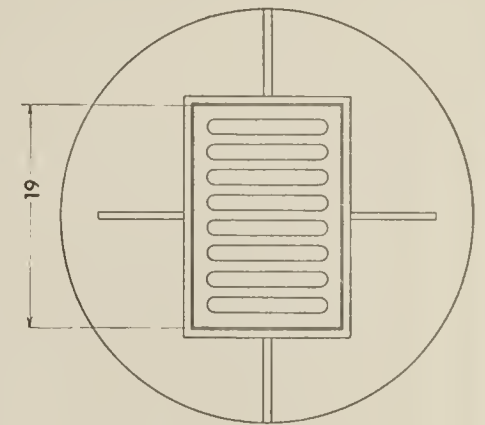
PATTERN 4125



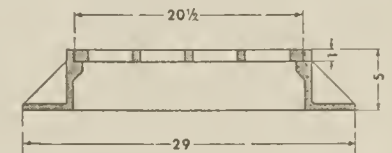
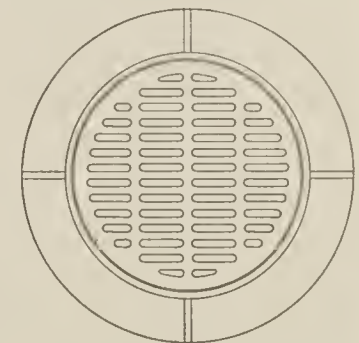
PATTERN 4126



PATTERN 4128

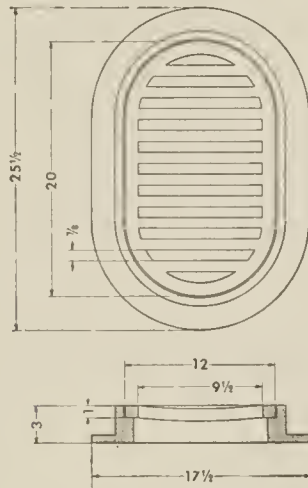


PATTERN 4127

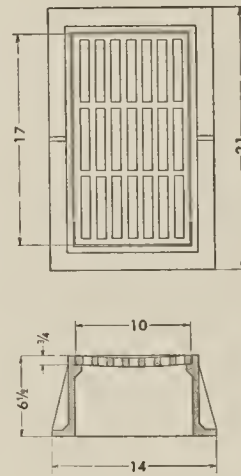


PATTERN 4129

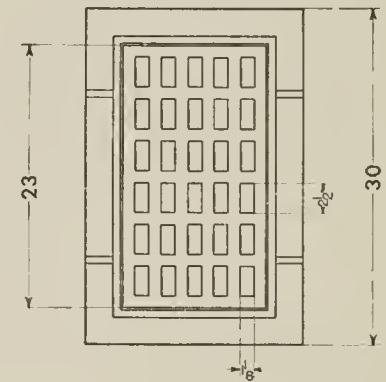
Areaway and Court Drains



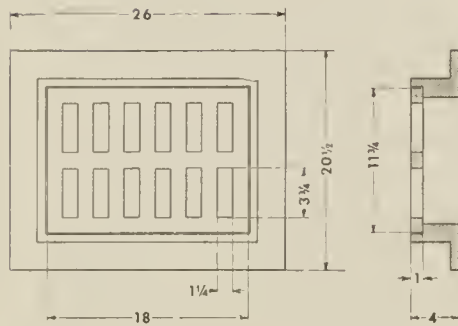
PATTERN 4135



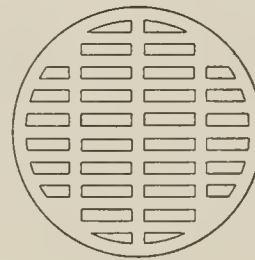
PATTERN 4136



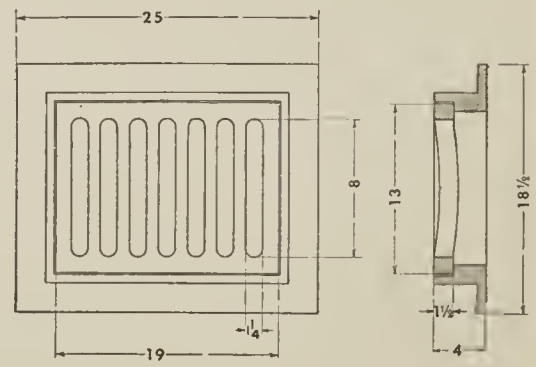
PATTERN 4137



PATTERN 4138



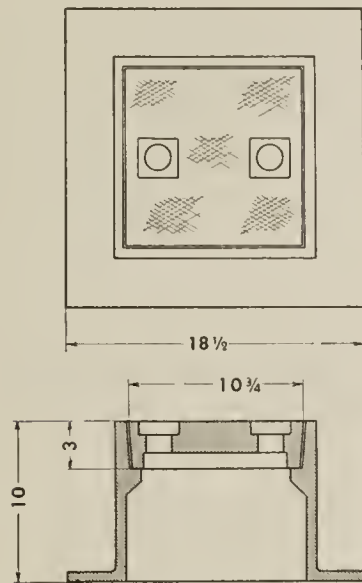
PATTERN 4139



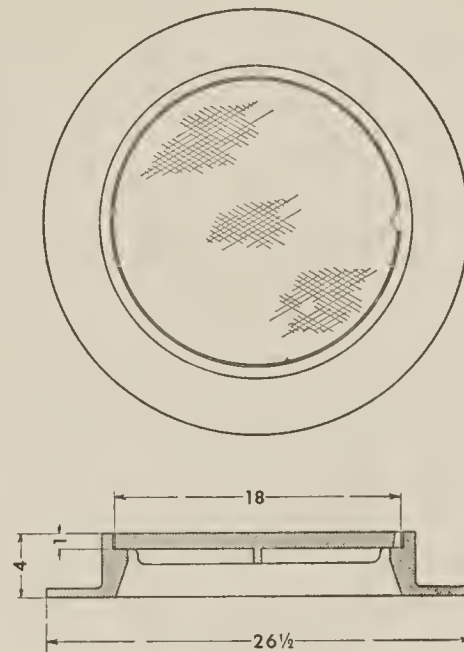
PATTERN 4140

When ordering, specify pipe size, kind (Vitrified tile, concrete or cast iron). End to be used (plain or bell).

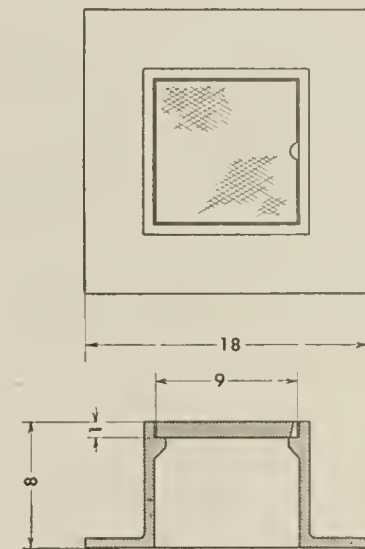
Lamp Hole Frames and Monument Boxes



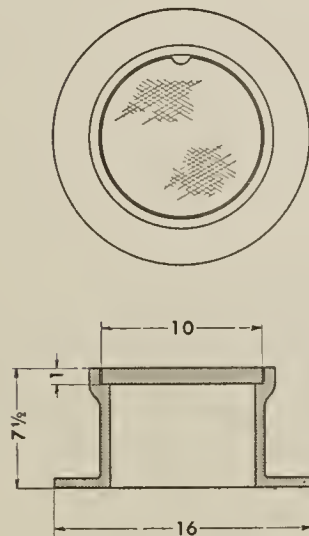
PATTERN 4150



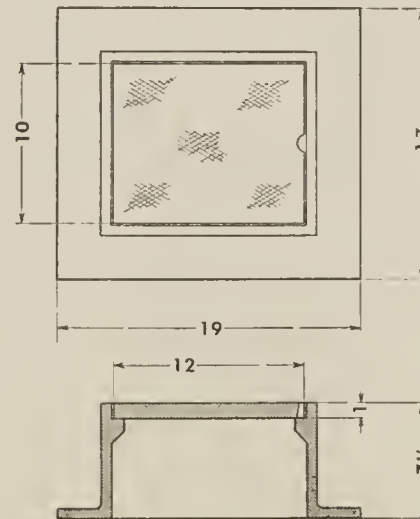
PATTERN 4151



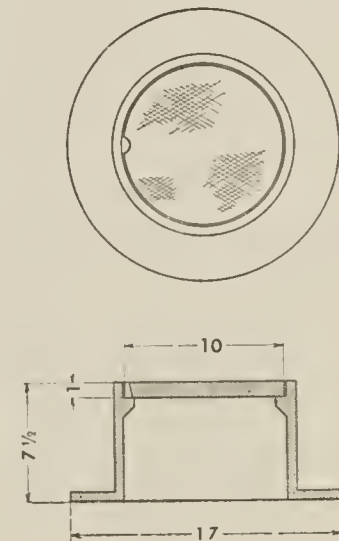
PATTERN 4152



PATTERN 4153

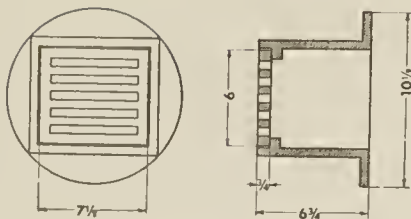


PATTERN 4154

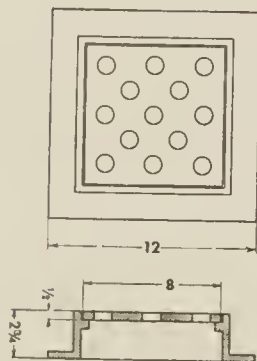


PATTERN 4155

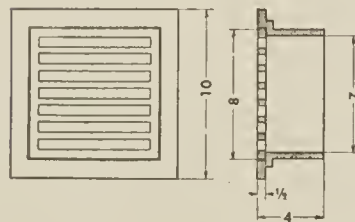
Garage---Driveway Drains



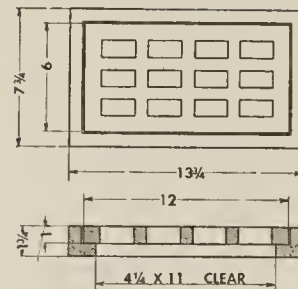
PATTERN 4160



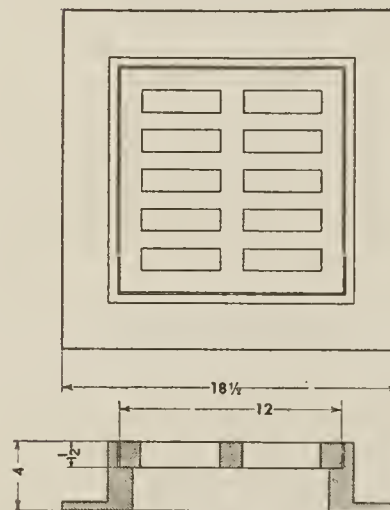
PATTERN 4162



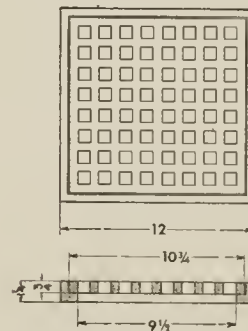
PATTERN 4165



PATTERN 4161

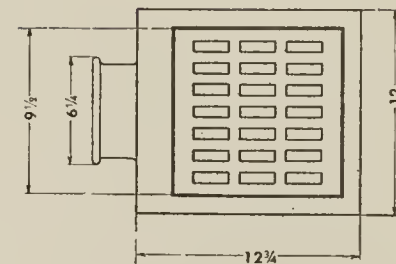


PATTERN 4163

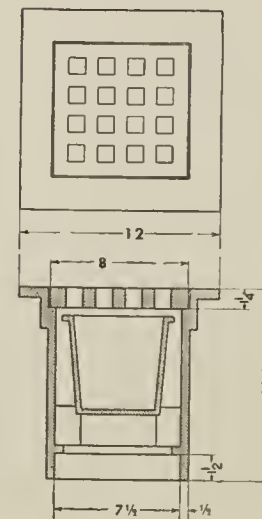
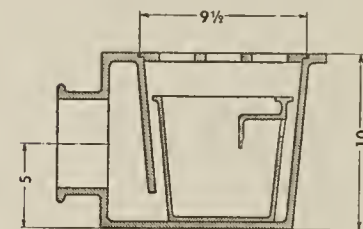


PATTERN 4166

Trap Drains

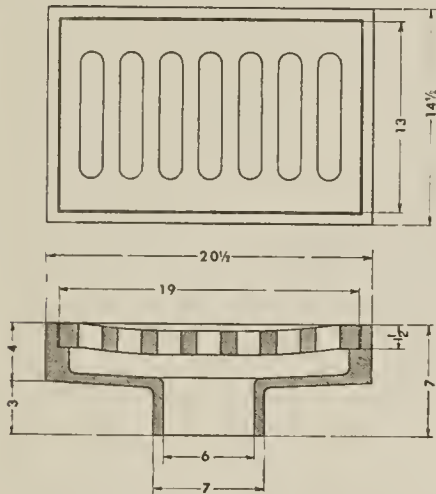


PATTERN 4164

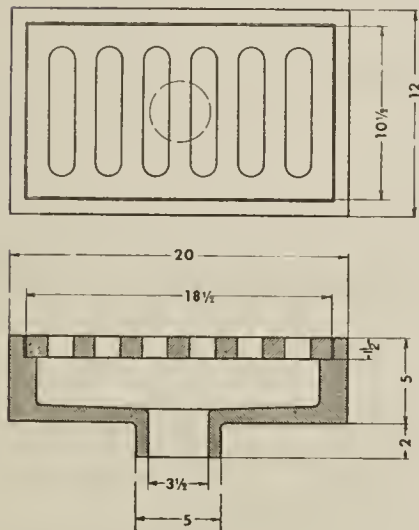


PATTERN 4167

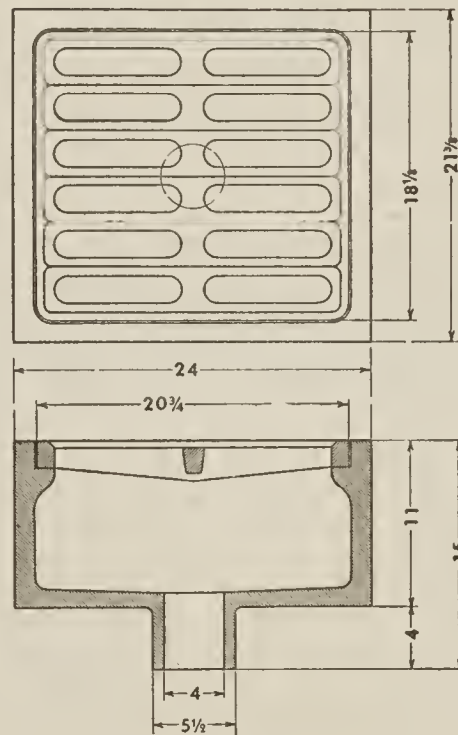
Bridge and Viaduct Scuppers



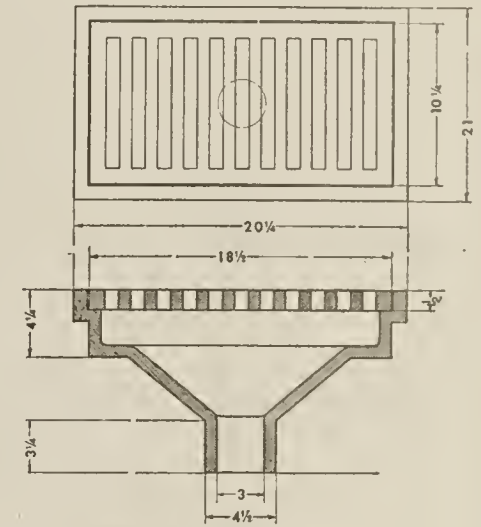
PATTERN 4200



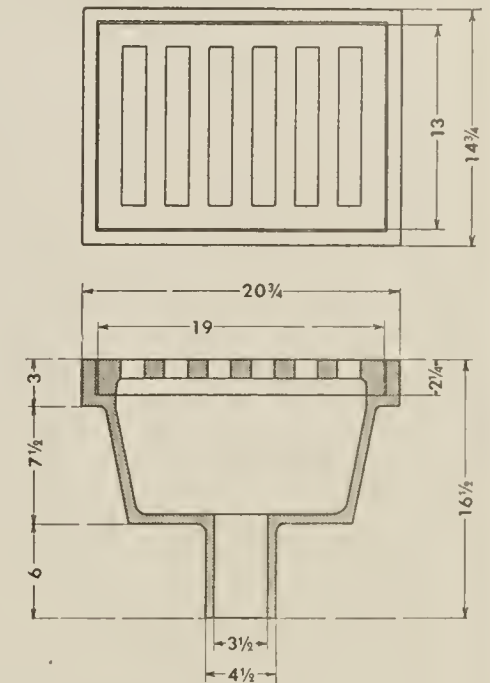
PATTERN 4203



PATTERN 4201



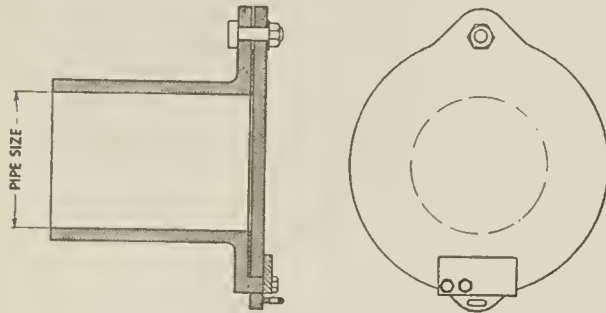
PATTERN 4202



PATTERN 4204

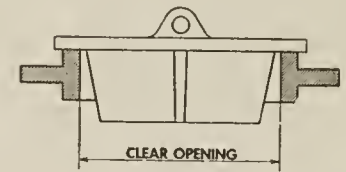
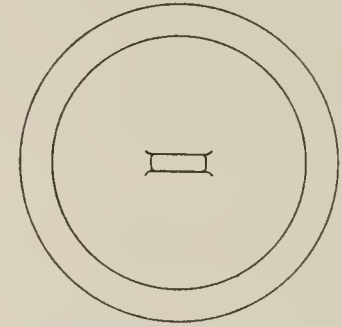
Outlets can be altered in size; made plain, flanged or threaded as required.

Drainage Line Valves---Gates



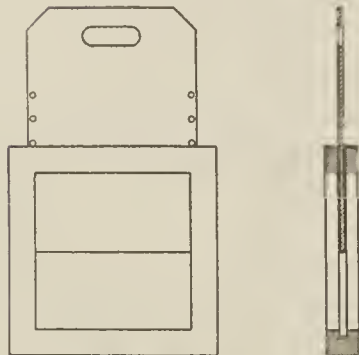
SHEAR GATE
PATTERN 4300

Castings shown are for illustration only. Give pipe size and specifications of castings required. Full details available on request.



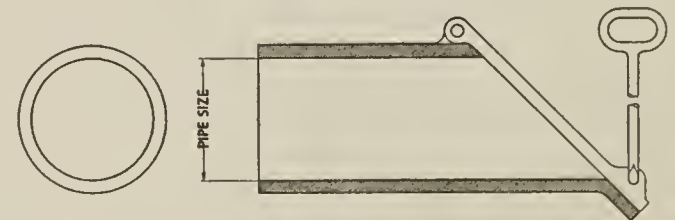
LIFT VALVE

PATTERN 4301



SLIDE VALVE

PATTERN 4302

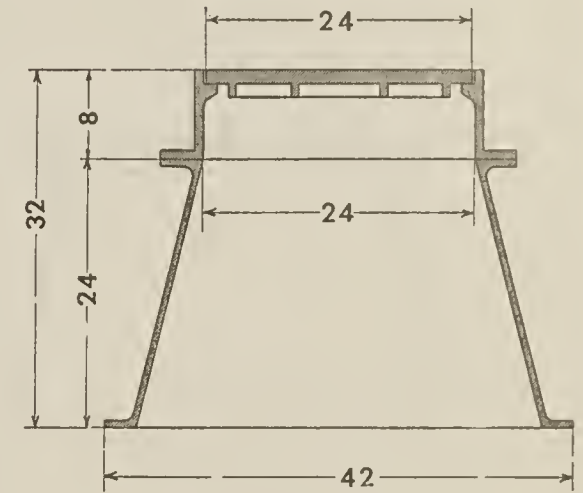
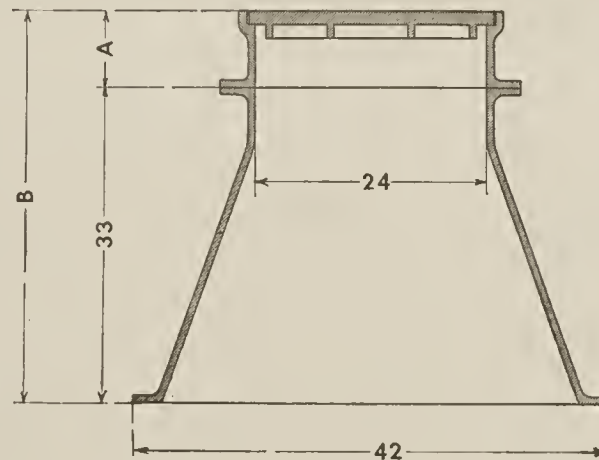
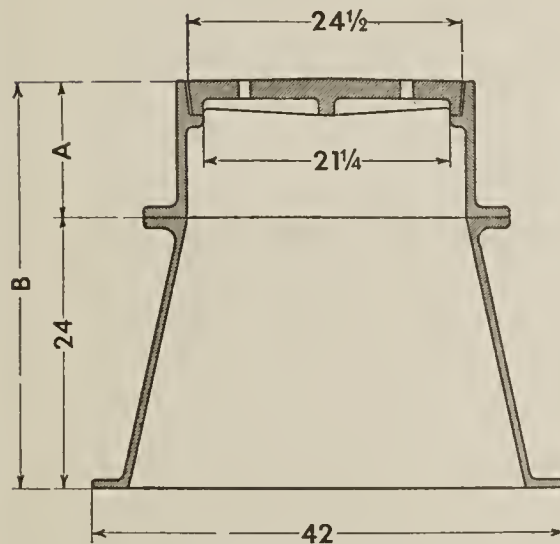
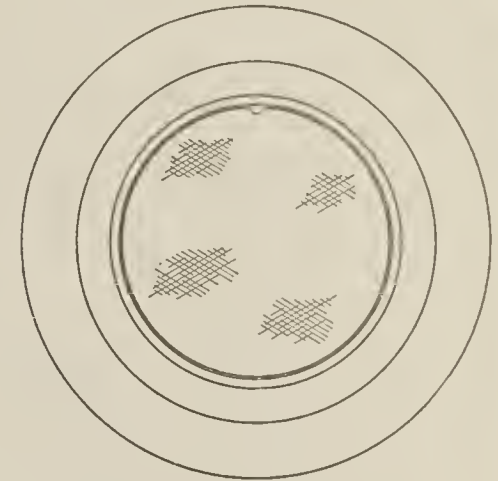
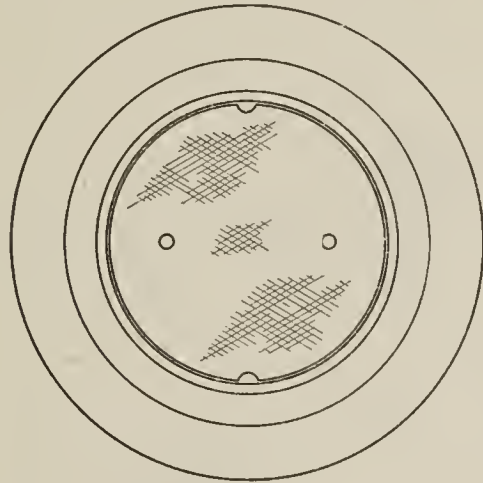


CHECK VALVE

PATTERN 4303

Water Line Valve and Meter Boxes

HIGHWAY TYPE



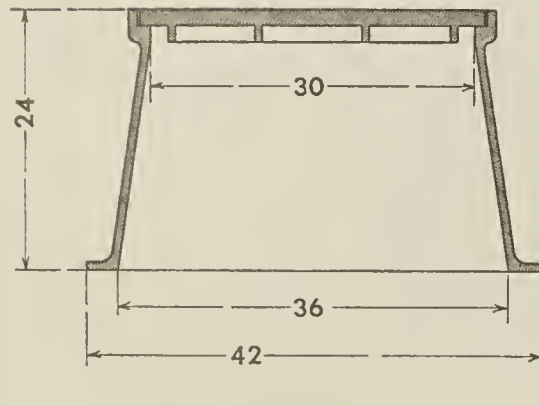
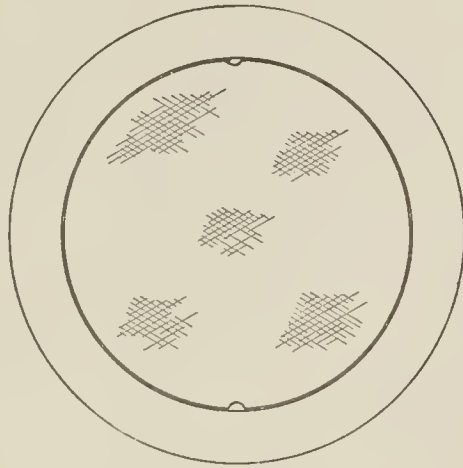
Pattern Numbers	A	B
4400	6	30
4401	8	32
4402	10	34
4403	12	36

Pattern Numbers	A	B
4410	6	39
4411	8	41
4412	10	43

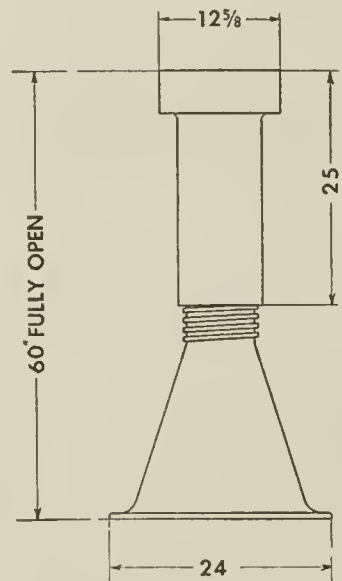
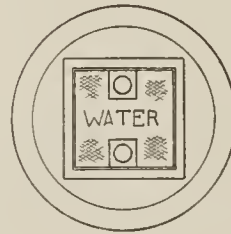
PATTERN 4420

Water Line Valve and Meter Boxes

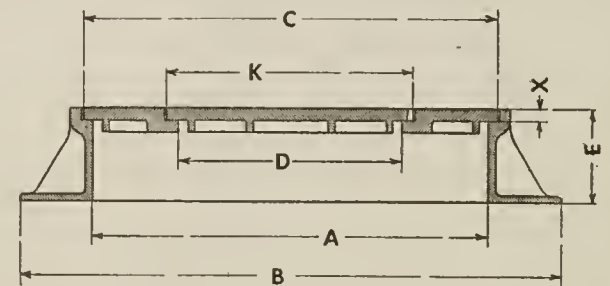
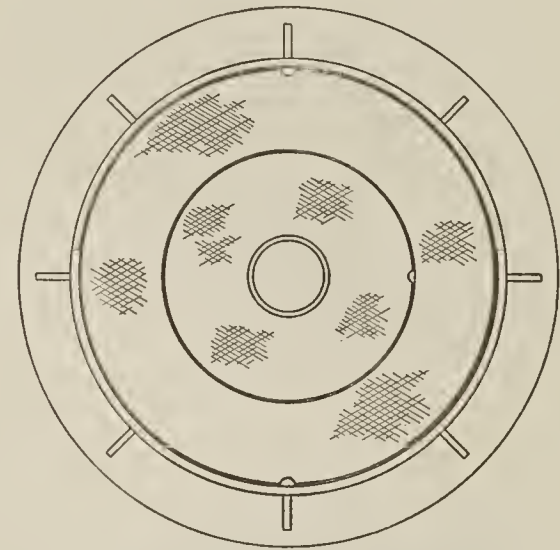
HIGHWAY TYPE



PATTERN 4421



PATTERN 4425

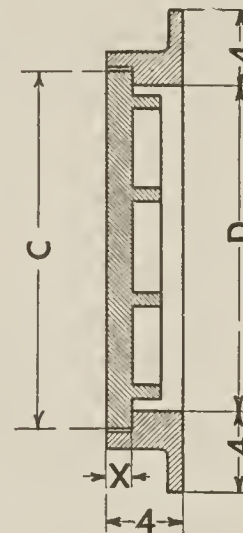
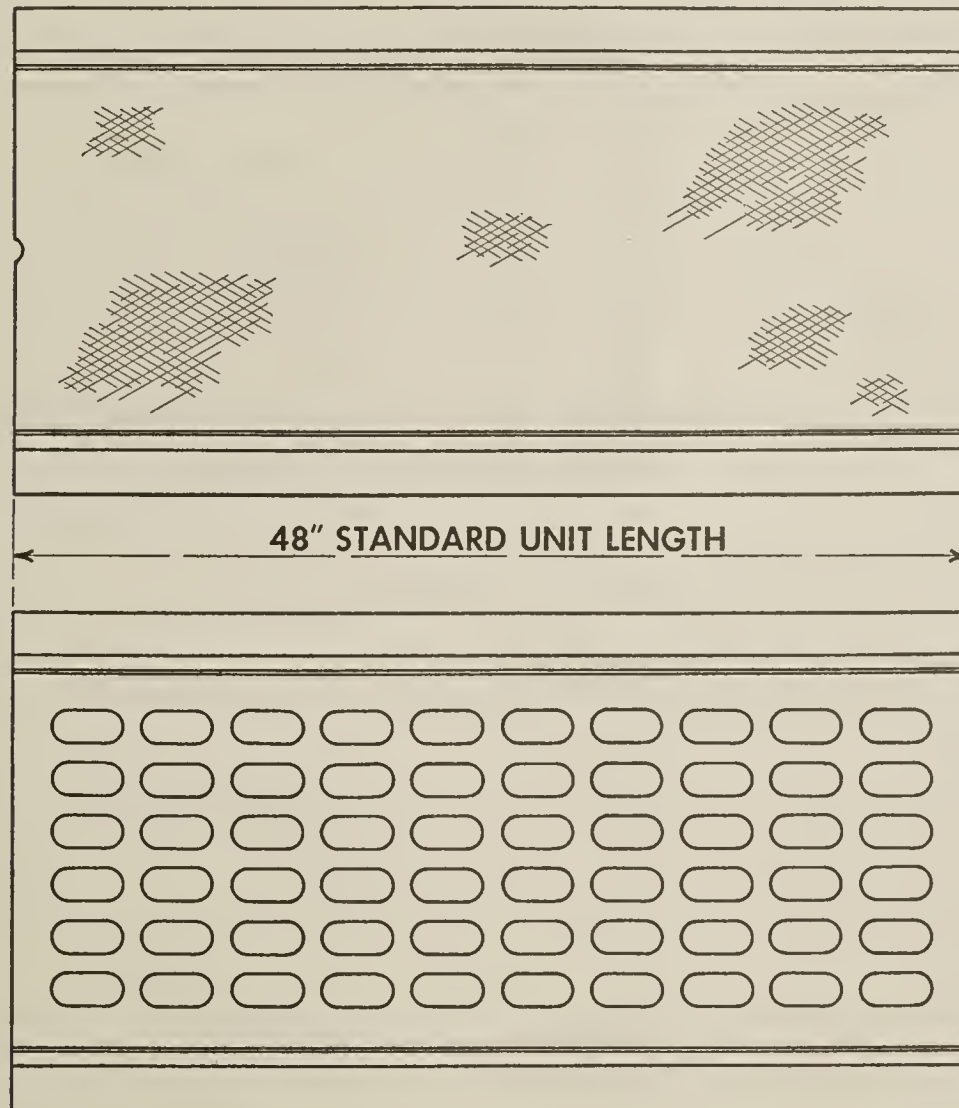


Pattern Numbers	DIMENSIONS						
	A	B	C	D	E	K	X
4430	42	55	44 1/4	22	8	23 3/4	1 1/2
4431	48	64	50	22	8	23 3/4	1 1/2

A specially designed manhole casting affording large access opening but equipped with smaller cover for quick inspection.

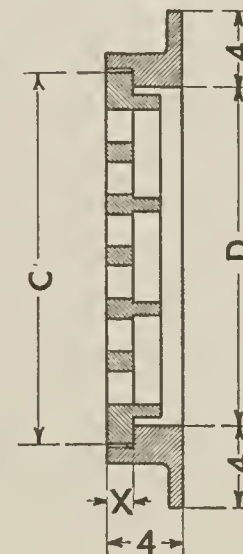
Trench Frames---Covers---Grates

HEAVY DESIGN



SOLID COVER

Pattern Numbers	C	D	X
4500	7 ³ / ₄	6	1
4501	11 ³ / ₄	10	1
4502	13 ³ / ₄	12	1 ¹ / ₄
4503	19 ³ / ₄	18	1 ¹ / ₄
4504	25 ³ / ₄	24	1 ¹ / ₂
4505	31 ³ / ₄	30	1 ¹ / ₂

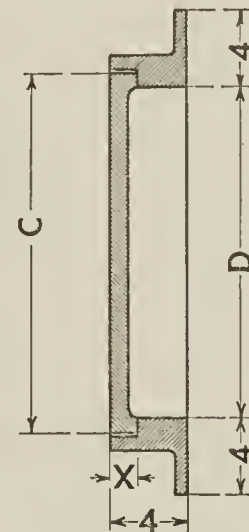
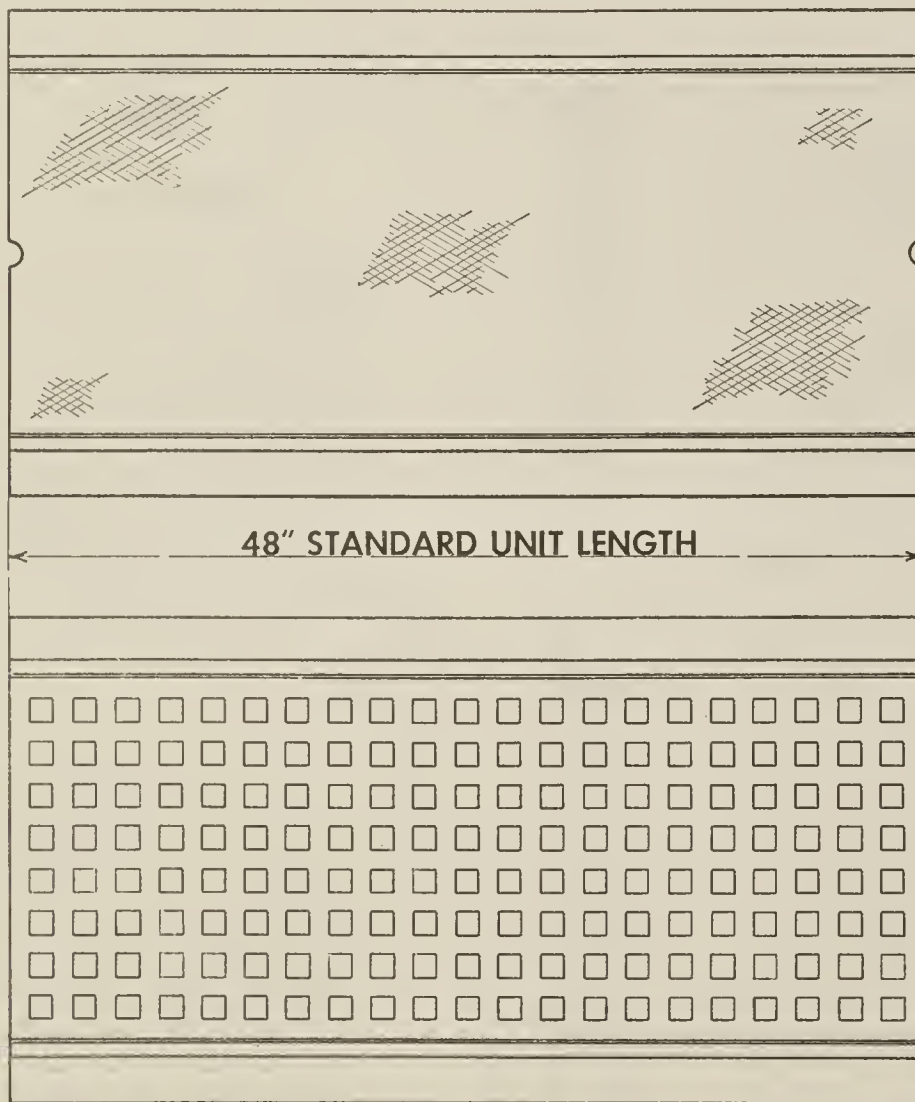


GRATING COVER

Pattern Numbers	C	D	X
4525	7 ³ / ₄	6	1
4526	11 ³ / ₄	10	1
4527	13 ³ / ₄	12	1 ¹ / ₄
4528	19 ³ / ₄	18	1 ¹ / ₄
4529	25 ³ / ₄	24	1 ¹ / ₂
4530	31 ³ / ₄	30	1 ¹ / ₂

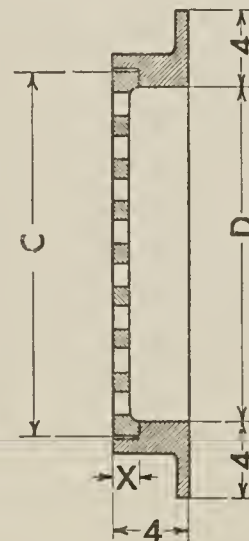
Trench Frames---Covers---Grates

LIGHT TRAFFIC — SIDEWALK DESIGN



SOLID COVER

Pattern Numbers	C	D	X
4550	7 ¾	6	1
4551	11 ¾	10	1
4552	13 ¾	12	1 ¼
4553	19 ¾	18	1 ¼
4554	25 ¾	24	1 ½
4555	31 ¾	30	1 ½



GRATING COVER

Pattern Numbers	C	D	X
4575	7 ¾	6	1
4576	11 ¾	10	1
4577	13 ¾	12	1 ¼
4578	19 ¾	18	1 ¼
4579	25 ¾	24	1 ½
4580	31 ¾	30	1 ½

